## 2R - 422

# CORRECTIVE ACTION PLANS

September 25, 2013



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Enterprise Products Operating LLC P.O. Box 4324 Houston, Texas 77210 Attention: Mr. David R. Smith, P.G.

Re: Supplemental Corrective Action Work Plan S. Carlsbad Compressor Station (OCD Permit No. 2R-422) NWC of Carrasco Road and CR 710 Carlsbad, Eddy County, New Mexico SWG Project No.: 0210G003

Mr. Smith,

Southwest Geoscience (SWG) has prepared this Supplemental Corrective Action Work Plan (CAWP) for the Enterprise Products Operating LLC (Enterprise) S. Carlsbad Compressor Station located at the northwest corner of Carrasco Road and CR 710, approximately ten (10) miles southeast of Carlsbad in Eddy County, New Mexico (SE1/4 of SE1/4 of S12, T23S, R27E), referred to hereinafter as the "Site" or "subject Site." The Site is currently improved as a natural gas compressor station. A topographic map depicting the location of the Site is attached as Figure 1 and a Site Vicinity Map is attached as Figure 2 of Attachment A. In addition, a Site Map depicting the approximate location of pertinent structures and field investigation is included as Figure 3 of Attachment A.

#### Site History and Background

The Site formerly included a tank battery on the south/southwestern portion of the property which stored natural gas condensate or produced liquids separated from the natural gas stream which is processed at the Site. Enterprise personnel identified stained soils indicative of historical leakage prior to and during the decommissioning of the former on-Site tank battery. Initial site investigation activities were performed by SWG in November of 2009, which included the advancement of one (1) soil boring to a depth of 20 feet below ground surface (bgs). Two soil samples were collected from soil boring B-1 at 7 to 8 feet bgs and 19 to 20 feet bgs and submitted for benzene, toluene, ethylbenzene, and xylenes (BTEX) and total petroleum hydrocarbon (TPH) gasoline range organics (GRO)/diesel range organics (DRO) analysis utilizing SW-846 #8021B utilizing EPA method SW-846 #8015M, respectively. Concentrations of constituents of concern (COC) were compared to the New Mexico Energy, Minerals and Natural Resources Department (EMNRD) Oil Conservation Division's (OCD) Remediation Action Levels. Based on the laboratory analytical results, the soil samples collected from soil boring B-1 did not exhibit benzene or total BTEX concentrations in exceedance of the OCD *Remediation Action Levels*. The soil sample collected from soil boring B-1 7 to 8 feet bgs exhibited a TPH GRO/DRO concentration of 980 mg/Kg, which exceeds the OCD Remediation Action Level of 100 mg/Kg. The soil sample collected form soil boring B-1 19 to 20 feet bgs did not exhibit TPH GRO/DRO concentrations in exceedance of the OCD *Remediation Action Levels*. It should be noted that the soil samples collected from soil boring B-1 were previously reported as having TPH GRO/DRO concentrations below the OCD Remediation Action Levels, which has been revised based on the adjusted "ranking" of the Site. The results of the soil sample analysis and the OCD Remediation Action Levels are presented on Table 1 of Attachment B. The field screening results are presented on the soil boring logs of Attachment C.

SWG utilized the OCD Guidelines for Remediation of Leaks, Spills and Release to assess and establish the appropriate "ranking" or *Remediation Action Levels* for the Site. Based on a review of review of New Mexico Office of the State Engineer (OSE) water well records, the depth to groundwater in the vicinity of the Site is estimated to be approximately 56 feet bgs. A search of New Mexico water well records identified four (4) water wells within 1,000 feet of the Site. One (1) water well (point of diversion (POD) #C03053) was reportedly located approximately 60 feet west of the Site, or 400 feet northwest of the release source area; one (1) water well (POD #C03457) was reportedly located approximately 200 feet west of the Site, or 575 feet northwest of the release source area; one (1) water well (POD #C00069) was reportedly located approximately 350 feet east of the Site, or 850 feet east of the release source area; and one (1) water well (POD C00461) was reportedly located approximately 550 feet southeast of the Site, or 900 feet southeast of the release source area. SWG did not identify the water wells reported at POD location #C03053 or C03457. It is suspected that these wells may be located on farmsteads to the northwest or southwest of the Site. SWG observed an irrigation well near the reported POD location #00069, which was approximately 100 feet east of the Site, or 500 east of the release source area. This well is currently active and utilized to pump water into nearby irrigation canals. SWG observed an irrigation well near the reported POD location #C00461, which was approximately 600 feet southeast of the Site or 800 feet southeast of the release source area. This well appeared to be out of use. The hydrogeologic gradient at the Site was estimated based on the surface topography relief, which is generally to the northeast. A field survey identified one (1) down-gradient surface water feature within 1,000 feet of the Site. A concrete-lined irrigation canal which runs north and south was identified approximately 50 feet east of the Site. However, this feature was not included in the Site ranking based on the presence of a concrete lining. Based on SWG's review of Site characteristics (specifically: depth to groundwater, wellhead protection area and distance to surface water) an associated ranking score of forty (40) was determined for the Site in accordance with the OCD's Guidelines for Remediation of Leaks, Spills and Releases. The OCD's *Remediation Action Levels* for sites with a total ranking score of >19 is 10 milligrams per kilogram (mg/Kg) benzene, 50 mg/Kg total BTEX, and 100 mg/Kg TPH GRO/DRO. It should be noted that the Site was previously reported to have a total ranking score of ten (10). This has since been revised based on the review of additional well logs and visual observations. A copy of the New Mexico OSE water well records and location summary map is in Attachment E. It should be noted that the water well locations for POD #00069 and #C00461 were adjusted based on observations made during the field survey.

A CAWP was issued for the Site on July 6, 2010, which was reviewed and approved by the OCD. As part of the CAWP, excavation activities were performed in vicinity of the former storage tank battery in October of 2010. An approximate total of 600 in-place cubic yards (cy) of petroleum hydrocarbon impacted soil was excavated from the Site. The excavations continued horizontally and vertically with final dimensions of approximately 60 feet long by 25 feet wide and depths ranging from 12 to 15 feet deep. During the excavation activities, SWG encountered silty clays, clayey silts, and silty sands to approximately 8 feet bgs followed by a weathered sandstone to the terminus depth of the excavation where competent sandstone was encountered. Subsequent to the completion of excavation activities soil confirmation samples were collected from the final extents of each of the excavation sidewalls and floor and submitted for BTEX and TPH GRO/DRO analysis. Based on the laboratory analytical results, the final excavation confirmation soil sample collected from the north, east, and southeast portion of the excavation sidewalls (EC-1(R), EC-2(R), and EC-3(R)A) exhibited a total BTEX and/or TPH GRO/DRO concentrations in exceedance of the OCD Remediation Action Levels. The remaining excavation confirmation soil samples did not exhibit benzene, total BTEX, or TPH GRO/DRO concentrations in exceedance of the OCD Remediation Action Levels. To further evaluate the identified TPH concentrations at the Site, SWG submitted soil samples EC-1(R) and EC-2(R) for TPH speciation analysis utilizing TCEQ method TX1006. SWG utilized the published American

Supplemental Corrective Action Work Plan Enterprise S. Carlsbad Compressor Station NWC Carrasco Road and CR 710 Carlsbad, Eddy County, New Mexico SWG Project No. 0210G003 September 25, 2013



Petroleum Institute (API) Spreadsheet for Calculating Risk-Based Screening Levels (RBSL) and the inverse weighted average (TPH Mass Fractions of aliphatic and aromatic hydrocarbons) to establish a Site Specific RBSL for the complete TPH mixture (i.e., the whole product). The calculated TPH RBSL for soil at the Site utilizing the EC-1(R) soil sample is 5,000 mg/Kg. The calculated TPH RBSL for soil at the Site utilizing the EC-2(R) soil sample is 5,200 mg/Kg. In order to be conservative, SWG utilized TPH RBSL of 5,000 mg/Kg for soil at the Site. Soil confirmation samples EC-1(R), EC-2(R), and EC-3A(R) did not exhibit TPH GRO/DRO concentration in exceedance of the calculated API Site-Specific TPH RBSLs for Residential Soils.

Subsequent to the completion of excavation activities, the excavation was backfilled using imported fill. The excavated soils were placed within two landfarm treatment cells constructed on the northwest and southwest portion of the Site. The soils were spread and tilled or raked to enhance aeration of petroleum hydrocarbon COCs. In addition, a bioremediation agent (Remedy) was applied which includes nonpathogenic bacterial strains which assist in degradation and metabolism of petroleum hydrocarbons. Subsequent to proposed aeration and attenuation schedules, confirmation soil samples were collected from 20 sampling points within the landfarm treatment cells and submitted for TPH GRO/DRO, BTEX, and chlorides analysis. Some of the sampling points within the landfarm treatment cell were resampled for one or more COCs. Based on the laboratory analytical results, the most recent confirmation soil samples collected from the landfarm treatment cell did not exhibit chlorides, benzene, total BTEX, and/or TPH GRO/DRO concentrations in exceedance of the NMAC *Small Landfarm Closure Performance Standards*. Photographic documentation of corrective action activities is available as Attachment D.

The soils within and below the landfarm treatment cells were treated such that chlorides, benzene, total BTEX, and TPH GRO/DRO concentrations were below the NMAC *Small Landfarm Closure Performance Standards*. As a result, the treated soils were stockpiled on the northwest portion of the Site pending OCD approval for future on-site and/or off-site reuse. Vadose zone samples VZ-1 and VZ-2 were collected from below each landfarm treatment cell which did not exhibit chlorides, benzene, total BTEX, and/or TPH GRO/DRO, concentrations in exceedance of the NMAC *Small Landfarm Closure Performance Standards*, with one exception. Vadose zone soil sample VZ-2 exhibited chlorides concentration in exceedance of the NMAC *Small Landfarm Closure Performance Standards*. However, based on the predominately low levels of chlorides concentration previously observed within the confirmation soil samples collected from the landfarm treatment cells, it is possible that the exceedance may be attributed to naturally occurring chlorides in the native soil at the Site.

Supplemental site investigation activities were conducted in the vicinity of the former tank battery in February 2011 to further evaluate the magnitude and extent of COC concentrations in the on-site soils within in the vicinity of the former tank battery. The supplemental site investigation activities included the advancement of eight (8) additional soil borings to a refusal depth of 8 feet bgs in the area north, east, and south of the former tank battery. The soil borings were advanced utilizing direct-push technology under the supervision of a New Mexico licensed water well driller. The soil cores were collected continuously utilizing a split-spoon sampler via Geoprobe® to the terminus depth of each soil boring. The lithology encountered during the advancement of the supplemental soil borings included a silty clay, clayey silt, or silty sand. Petroleum hydrocarbon odors were detected in the soil cores collected from soil borings B-2 through B-8. SWG screened the soil core samples with a photoionization detector (PID) for the presence of volatile organic compounds (VOCs). The PID readings from soil borings B-2 through B-9 ranged from zero (0) to 384 ppm. The highest PID reading was observed in the soil sample collected from soil boring B-2 at a depth of 5 to 6 feet bgs. SWG's soil sampling program involved submitting up to two (2) soil samples from soil borings B-3 through B-9. The soil samples were collected from the zone exhibiting the highest PID reading, from a change in lithology,

Supplemental Corrective Action Work Plan Enterprise S. Carlsbad Compressor Station NWC Carrasco Road and CR 710 Carlsbad, Eddy County, New Mexico SWG Project No. 0210G003 September 25, 2013



and/or from the bottom of the boring, based on the field professional's judgment. A soil sample from soil boring B-2 was not submitted for laboratory analysis. Based on the laboratory analytical results, soil samples collected from the supplemental soil borings B-3 and B-6, which were advanced to the northeast and east of the former tank battery, exhibited total BTEX and TPH GRO/DRO concentrations in exceedance of the OCD *Remediation Action Levels* and/or the API Site-Specific TPH RBSLs for Residential Soils. The remaining soil samples collected from the supplemental soil borings did not exhibit benzene, total BTEX, or TPH GRO/DRO concentrations in exceedance of the OCD *Remediation Action Levels* and/or the API Site-Specific TPH RBSLs for Residential Soils. Field screening results are presented on soil boring logs included in Attachment C.

A Corrective Action Report was issued for the Site in May of 2012, which documented the findings of on-site investigation and corrective action activities. Soils remained on-site with TPH GRO/DRO and/or total BTEX concentrations in exceedance of the OCD Remediation Action Levels, which were identified in soil confirmation sample EC-1(R) and soil borings B-3 and B-6. It is anticipated that the area of affected soil was primarily limited to the upper 8 to 9 feet of surface soils, based on the established presence of a sandstone formation encountered near this depth. Thus, it is believed that petroleum hydrocarbon COCs migrated horizontally in the upper 15 feet of surface soils as evidenced by previous field screening data and the laboratory analytical results of the soil samples collected from the on-site excavation confirmation samples and soil borings. It is believed that the corrective actions addressed source area soils, which were most heavily impacted as a result of historic leakage originating from the former on-site tank battery. In addition, it is believed that the affected soils are likely limited to the area north, northeast, and east of the former storage tank battery. Numerous aboveground and/or underground appurtenances related to natural gas processing operations exist within these areas. Thus, excavation activities in the vicinity of the affected soils which remain in-place would not be feasible. In accordance with NMAC 19.15.30.9, a variance of alternative abatement requirements or standards may be requested from the OCD based on the technical infeasible access of surface soils in onsite operations area. The Corrective Action Report recommended that the OCD be informed of the intent to close the small landfarms, reuse the treated soils, and petition the director of the OCD for alternative abatement standards.

The New Mexico OCD reviewed the Corrective Action Report and responded with conclusions/recommendations in a correspondence email issued on July 17, 2012. The OCD requested the submission of the C-137EZ form for closure of the former on-site landfarms treatment cells; resampling of the vadose zone below the former southwest landfarm for chlorides analysis; advancement of an additional soil borings in the vicinity of B-1 and B-2 to groundwater, conversion of the additional soil boring to a 2-inch monitoring well if phase-separated hydrocarbons are identified in the vadose zone or groundwater bearing unit, and delineation of the area to the north, northeast, and east of the former excavation. SWG issued a letter response to the Corrective Action Report review on September 10, 2012. The letter response proposed the collection of three (3) additional soil samples from the vadose zone below the former southwest landfarm treatment cell to further evaluate chlorides concentrations in the vadose zone below the former southwest landfarm area. The soil samples were proposed to be submitted for chlorides analysis utilizing EPA method 300.0. A Form C-137EZ was proposed for completion subsequent to the completion of vadose zone sampling activities and attainment of the NMAC Small Landfarm Closure Performance Standards. Additional soil borings were not proposed citing the results of previously documented field screening data, soil sampling data, and site lithology. The OCD replied by phone on October 4, 2012. Mr. Carl Chavez of the OCD agreed with the proposed additional corrective actions with one exception. Additional investigation and/or response action activities were requested in the area east and northeast of the former on-Site excavation, near soil borings B-2 and B-3.



#### Proposed Corrective Actions

Based on the results of the corrective action and supplemental site investigation activities, petroleum hydrocarbon affected soils with COC concentrations in exceedance of the OCD *Remediation Action Levels* are known to remain at the Site in the areas north, northeast, and east of the former excavation, referred to as the "project area" hereinafter. Numerous aboveground and/or underground appurtenances, including piping and electric conduit, related to natural gas processing operations exist within these areas. The direction in which much of the underground infrastructure traverses the Site in unknown; it is anticipated to be intermingled in an unsystematic manner. In addition, the facility operations building is in close proximity east of the former on-site excavation. The removal of affected soils within the project area would be extremely hazardous and highly cost prohibitive. In accordance with NMAC 19.15.30.9, a variance of alternative abatement requirements or standards may be requested from the OCD based on the technical infeasible access of surface soils in the on-site operations area. SWG proposes to file for a variance of alternative abatement standards which would allow the affected surface soils to be left in place subsequent to delineating the vertical and horizontal extent of COCs remaining in surface soils to the OCD Remediation Action Levels.

It is believed that the vertical extent of affected soils with COCs concentrations in exceedance of the OCD *Remediation Action Levels* is confined to the upper 15 feet of surface soils in the project area. The objective of the supplemental site investigation activities will be to further delineate the vertical and horizontal extent of affected soils which are known to remain in place in the project area. Based on the October 4, 2012 phone conversation with Mr. Carl Chavez of the OCD, field screening and sampling data which indicates unaffected soil for at least 10 feet beyond the affected soils left in-place will sufficiently demonstrate confinement to the upper 15 feet and protection of the underlying groundwater unit.

SWG proposes to advance five (5) soil borings to total depth of 25 feet bgs. One soil boring will be advanced east of the former excavation in the vicinity of soil boring B-3, one soil boring will be advanced north of the excavation in the vicinity of soil boring B-7, one soil boring will be advanced northeast of the excavation in the vicinity of soil boring B-6, one soil boring will be advanced east of soil boring B-5 and north of the facility operations building, and one soil boring will be advanced east of soil boring B-4 and the facility operations building. The exact location of the proposed soil borings may require adjustment in the field should subsurface pipeline or electric conduit interference be anticipated. The locations of the proposed soil borings are depicted on the attached Figure 3.

The soil borings will be completed utilizing an air rotary drilling rig. Sampling and drilling equipment will be decontaminated by high pressure cleaning prior to commencement of the project and between the advancement of each soil boring. Soil samples will be collected continuously from soil cuttings in one-foot intervals to document lithology, color, relative moisture content and visual or olfactory evidence of impairment. In addition, the samples will be scanned with a PID for the presence of VOCs. SWG's soil sampling program will involve submitting up to two (2) soil samples from each soil boring for TPH GRO/DRO and BTEX analysis utilizing EPA method SW-846 #8015M and SW-846 #8021B, respectively. Soil samples will be collected from the zone exhibiting the highest PID reading, from a change in lithology, or from the bottom of the boring, based on the field professional's judgment.

Three (3) additional soil borings will be advanced with a hand auger within the former southwest landfarm area. One (1) vadose zone soil sample will be collected from each hand auger boring between 3 and 3.5 feet bgs or auger refusal, whichever is shallower.

Supplemental Corrective Action Work Plan Enterprise S. Carlsbad Compressor Station NWC Carrasco Road and CR 710 Carlsbad, Eddy County, New Mexico SWG Project No. 0210G003 September 25, 2013



Each of the soil samples collected from the hand auger borings will be submitted for chlorides analysis utilizing EPA method 300.0.

A letter report will be issued subsequent to completion of the supplemental site investigation activities. The results of the soil sample analysis will be compared to the OCD *Remediation Action Levels* and/or the API Site-Specific TPH RBSL for Residential Soils. Surface soils (0-15 feet) will be considered vertically delineated and protective of groundwater provided that field screening and laboratory analytical results indicate that the lower 10 feet of each soil column is not affected with COC concentrations in exceedance of the OCD *Remediation Action Levels* and/or the API Site-Specific TPH RBSLs for Residential Soils. Investigation derived waste, including soil boring cuttings, will be stored in 55-gallon drums pending waste characterization. The results of the vadose zone soil samples will be compared to the NMAC *Small Landfarm Closure Performance Standards*.

The letter report will include a request for closure of the Site in accordance with NMAC 19.15.30.9. provided that the supplemental site investigation activities delineate the extent of affected soils which remain in place within the project area. In addition, the C-137EZ Form will be completed, provided that the vadose zone soil samples collected from the former southwest landfarm indicate chlorides concentrations below the NMAC *Small Landfarm Closure Performance Standards*. In addition, a request for reuse of the treated soils for future on-Site and/or off-Site use will be made subsequent to the vadose zone resampling activities.

Should you have any questions or concerns regarding this work plan or otherwise, please contact either of the undersigned at your earliest convenience.

Sincerely,

Joseph W. Martinez Project Manager

B. Chris Mitchell, P. G. Principal Geoscientist



ATTACHMENT A

Figures





#### Supplemental CAWP

Enterprise Products Operating LLC S. Carlsbad Compressor Station Carrasco Road and CR 710 Carlsbad, Eddy County, New Mexico



FIGURE 2 Site Vicinity Map

Google Earth 2013

SWG Project No. 0210G003





ATTACHMENT B

Tables

TABLE 1         S. CARLSBAD COMPRESSOR STATION         SOIL ANALYTICAL RESULTS - SOIL BORING and EXCAVATION CONFIRMATION SAMPLES											
Sample I.D.	Date	Sample Depth (feet)	Chlorides (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	
New Mexico Depa	o Energy, Minerals rtment, Oil Conser Remediation Act	a Natural Resources vation Division, ion Level	NE	10	NE	NE	NE	50	10	xo	
Risk Base	API Site-Specif d Screening Level	ic TPH for Residential Soils	NE	NE	NE	NE	NE	50	5,000		
B-1 (7-8)	11/5/2009	7 to 8	NA	0.34	7.1	1.5	31	39.94	270	710	
B-1 (19-20)	11/5/2009	19 to 20	NA	<0.0021	<0.0022	< 0.0024	0.036	0.036	0.15	24	
B-2	2/25/2011				Soil Sample	s Not Collecte	d				
B-3 (6-7)	2/25/2011	6 to 7	NA	0.0091	56.8	13.1	224	293.9091	2,070	4,830	
B-4 (3-4)	2/25/2011	3 to 4	NA	<0.00131	<0.00131	<0.00131	<0.00394	<0.00787	<0.0657	4.17	
B-4 (5-6)	2/25/2011	5 to 6	NA	<0.00133	0.00316	<0.00133	0.0198	0.02562	3.75	368	
B-5 (4-5)	2/25/2011	4 to 5	NA	<0.00125	7.62	0.00991	29.4	37.03116	1,540	2,520	
B-6 (4-5)	2/25/2011	4 to 5	NA	<0.00122	0.00847	<0.00122	0.0147	0.02561	1.12	25.5	
B-6 (7-8)	2/25/2011	7 to 8	NA	<0.00128	7.17	4.15	46.3	57.62128	1,930	2,210	
B-7 (2-3)	2/25/2011	2 to 3	NA	<0.00122	< 0.00122	<0.00122	<0.00366	0.00732	< 0.0612	7.98	
B-7 (5-6)	2/25/2011	5 to 6	NA	< 0.0012	2.23	2.28	10.5	15.0112	960	1,480	
B-8 (4-5)	2/25/2011	4 to 5	NA	<0.00135	6.93	2.93	17.8	27.66135	2,100	1,920	
B-8 (7-8)	2/25/2011	7 to 8	NA	<0.00119	<0.00119	<0.00119	<0.00358	<0.00715	<0.0597	199	
B-9 (4-5)	2/25/2011	4 to 5	NA	< 0.0012	0.00416	< 0.0012	<0.00359	<0.01015	<0.0598	4.5	
B-9 (7-8)	2/25/2011	7 to 8	NA	<0.00186	<0.00186	<0.00186	<0.00558	<0.01116	<0.0929	8.98	
EC-1	1/31/2011	8 to 9	NA	<0.0125	13	9.23	103	125.2425	903	6,040	
EC-1(R)	2/24/2011	8 to 9	NA	<0.0123	13.1	2.62	50.1	65.8323	569	1,250	
EC-2	1/31/2011	8 to 9	NA	<0.00611	0.214	0.240	16.8	17.26011	1.34	4,530	
EC-2(R)	2/24/2011	8 to 9	NA	<0.0127	7.98	0.836	25.4	34.2287	6,980	674	
EC-2(R)*	2/24/2011	8 to 9	NA	NA	NA	NA	NA	NA	835	2,050	
EC-3	1/31/2011	8 to 9	NA	<0.00128	0.00713	<0.00128	59.4	59.40969	1,260	5,200	
EC-3(R)A	2/24/2011	8 to 9	NA	<0.0126	4.22	1.26	12.3	17.7926	515	640	
EC-3(R)B	2/24/2011	8 to 9	NA	<0.00135	0.00204	<0.00135	< 0.00406	0.0088	0.545	14.9	
EC-4	1/31/2011	8 to 9	NA	<0.00126	<0.00126	<0.00126	<0.00379	<0.00757	0.722	44	
EC-5	1/31/2011	14 to 15	NA	<0.0013	0.0156	0.04	0.123	0.1799	0.836	692	

Note: Concentrations in **bold** and yellow exceed the applicable OCD Remediation Action Level Note: Concentrations in **bold** and orange exceed the applicable calcualted EPA API TPH RBSLs. Note: Excavation confirmation samples shaded indicates the area was overexcavated or sample was resubmitted for analysis. \* Indicates analysis of a new extraction from sample NA = Not Analyzed ND = Not Detected NE = Not Established

	TABLE 2         S. CARLSBAD COMPRESSOR STATION         SOIL ANALYTICAL RESULTS - TREATED SOILS									
Sample I.D.	Date	Sample Depth (feet)	Chlorides (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)
NMAC Small Landfarm Closure Performance Standards		Performance Standards	500	0.2	NE	NE	NE	50	54	00
TS-1	3/24/2011	0 to 0.5	410	<0.19	<0.23	<0.23	<0.69	<1.34	140 (j)	1,600
TS-1 (R)	6/20/2011	0 to 0.5	NA	NA	NA	NA	NA	NA	81 (j)	1,800
TS-1 (R2)	8/24/2011	0 to 0.5	NA	NA	NA	NA	NA	NA	<16	570
TS-1 (R3)	11/3/2011	0 to 0.5	120	NA	NA	NA	NA	NA	<9.8	440
TS-2	3/24/2011	0 to 0.5	310	<0.019	<0.023	<0.023	<0.069	<0.134	8.3 (j)	770
TS-2 (R)	6/20/2011	0 to 0.5	NA	NA	NA	NA	NA	NA	<16	560
TS-2 (R2)	8/24/2011	0 to 0.5	NA	NA	NA	NA	NA	NA	<16	470
TS-3	3/24/2011	0 to 0.5	600	<0.19	<0.23	<0.23	0.83 (j)	1.48	<80	1,700
TS-3 (R)	6/20/2011	0 to 0.5	290	NA	NA	NA	NA	NA	<30	1,400
TS-3 (R2)	8/24/2011	0 to 0.5	NA	NA	NA	NA	NA	NA	<16	1,200
TS-3 (R3)	11/3/2011	0 to 0.5	120	NA	NA	NA	NA	NA	<24	1,200
TS-3 (R4)	12/6/2011	0.5 to 1	NA	NA	NA	NA	NA NA		<4.8	270
TS-4	3/24/2011	0 to 0.5	270	<0.019	<0.023	<0.023	O.14 (j)	0.205	17 (j)	1,300
TS-4 (R)	6/20/2011	0 to 0.5	NA	NA	NA	NA	NA	NA	<15	820
TS-4 (R2)	8/24/2011	0 to 0.5	NA	NA	NA	NA	NA	NA	<7.5	250
TS-5	3/24/2011	0 to 0.5	440	<0.019	<0.023	<0.023	<0.069	<0.134	<8.0	1,300
TS-5 (R)	6/20/2011	0 to 0.5	NA	NA	NA	NA	NA	NA	1.6 (j)	14
TS-6	3/24/2011	0 to 0.5	190	<0.37	<0.46	<0.45	1.6 (j)	2.88	<160	2,000
TS-6 (R)	6/20/2011	0 to 0.5	NA	<0.018	<0.022	<0.021	<0.065	<0.126	<7.6	230
TS-7	3/24/2011	0 to 0.5	260	<0.019	<0.023	0.023 (j)	0.25 (j)	0.315	20 (j)	1,500
TS-7 (R)	6/20/2011	0 to 0.5	NA	NA	NA	NA	NA	NA	<1.6	56
TS-8	3/24/2011	0 to 0.5	350	<0.019	0.039 (j)	0.069 (j)	0.09	0.217	47	1,500
TS-8 (R)	6/20/2011	0 to 0.5	NA	NA	NA	NA	NA	NA	<1.6	<3.5
TS-9	3/24/2011	0 to 0.5	410	<0.019	<0.023	0.023 (j)	<0.069	0.134	<8.0	650
TS-9 (R)	6/20/2011	0 to 0.5	NA	NA	NA	NA	NA	NA	<8.0	270
TS-10	3/24/2011	0 to 0.5	110	<0.19	<0.23	<0.23	<0.69	<1.34	<80	1,000
TS-10 (R)	6/20/2011	0 to 0.5	NA	NA	NA	NA	NA	NA	<8.4	250

Note: Concentrations in **bold** and yellow exceed the applicable NMAC *Small Landlarm Closure Performance Standards* (i) indicates that the analyte was reported at or above the Method Detection Limit and below the Practical Quantitation Limit NA = Not Analyzed NE = Not Established

	TABLE 2 (Cont.)           S. CARLSBAD COMPRESSOR STATION           SOIL ANALYTICAL RESULTS - TREATED SOILS and VADOSE ZONE SAMPLES									
Sample I.D.	Date	Sample Depth (feet)	Chlorides (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)
NMAC Small I	NMAC Small Landfarm Closure Performance Standards		500	0.2	NE	NE	NE	50	54	00
TS-11	3/24/2011	0 to 0.5	160	<0.19	<0.23	<0.23	<0.69	<1.34	<80	1,800
TS-11 (R)	6/20/2011	0 to 0.5	NA	NA	NA	NA	NA	NA	<16	790
TS-11 (R2)	8/24/2011	0 to 0.5	NA	NA	NA	NA	NA	NA	<1.5	350
TS-12	3/24/2011	0 to 0.5	160	<0.19	<0.23	<0.23	<0.69	<1.34	<80	1,400
TS-12 (R)	6/20/2011	0 to 0.5	NA	NA	NA	NA	NA	NA	<15	440
TS-13	3/24/2011	0 to 0.5	100	<0.37	<0.46	<0.45	<1.4	2.68	<160	1,900
TS-13 (R)	6/20/2011	0 to 0.5	NA	<0.24	<0.24	<0.24	<0.24	<0.48	<7.7	290
TS-14	3/24/2011	0 to 0.5	210	<0.19	<0.23	<0.23	<0.69	<1.34	<80	1,100
TS-14 (R)	6/20/2011	0 to 0.5	NA	NA	NA	NA	NA	NA	<15	500
TS-15	3/24/2011	0 to 0.5	210	<0.19	<0.23	<0.23	<0.69	<1.34	160 (j)	2,400
TS-15 (R)	6/20/2011	0 to 0.5	NA	NA	NA	NA	NA	NA	17 (j)	430
TS-16	3/24/2011	0 to 0.5	230	<0.19	<0.23	<0.23	<0.69	<1.34	210 (j)	1,900
TS-16 (R)	6/20/2011	0 to 0.5	NA	NA	NA	NA	NA	NA	<1.5	73
TS-17	3/24/2011	0 to 0.5	320	<0.037	<0.046	<0.045	<0.14	<0.268	<16	1,200
TS-17 (R)	6/20/2011	0 to 0.5	NA	NA	NA	NA	NA	NA	3.3 (j)	99
TS-18	3/24/2011	0 to 0.5	280	<0.19	<0.23	<0.23	<0.69	<1.34	<80	2,800
TS-18 (R)	6/20/2011	0 to 0.5	NA	NA	NA	NA	NA	NA	<1.6	63
TS-19	3/24/2011	0 to 0.5	290	<0.19	<0.23	<0.23	<0.69	<1.34	<80	2,700
TS-19 (R)	6/20/2011	0 to 0.5	NA	NA	NA	NA	NA	NA	<16	790
TS-19 (R2)	8/24/2011	0 to 0.5	NA	NA	NA	NA	NA	NA	<7.5	330
TS-20	3/24/2011	0 to 0.5	230	<0.19	<0.23	<0.23	<0.69	<1.34	<80	2,200
TS-20 (R)	6/20/2011	0 to 0.5	NA	NA	NA	NA	NA	NA	<1.6	72
VZ-1	3/3/2012	3 to 3.25	460	< 0.0047	<0.0081	<0.0039	<0.0160	<0.0327	<1.4	<5.4
VZ-2	3/3/2012	3 to 3.25	1,300	<0.0046	<0.0079	<0.0038	<0.0160	<0.0323	<1.3	<5.4

Note: Concentrations in **bold** and yellow exceed the applicable NMAC *Small Landlarm Closure Performance Standards* (i) indicates that the analyte was reported at or above the Method Detection Limit and below the Practical Quantitation Limit NA = Not Analyzed NE = Not Established

#### API Site-Specific TPH RBSLs in Soil

		Site-Sp	ecific T	PH RE	BSLs	in Soil					
	Residential S	oil RBSLs									
	Pathway:		Surface Ingestion, o contact, inhalation pa mg/k	Soil dermal and thw ays	Soil L to (recep benea T	Leaching o GW otor located ath source) Fier 1 ng/kg	Soi (red do	il Leaching to GW ceptor located ow ngradient) Tier 2 mg/kg	Su to C	rface Soil outdoor Air	
	RBSL for TPH (mg/kg)		5.0E+	03	So	oil res		Soil res	5	Soil Res	
	Non-Resident	ial Soil RBSLs	ļ				1				
	Pathway:		Surface Ingestion, c contact, inhalation pa mg/k	Soil dermal and thw ays	Soil L to (recep benea T	Leaching o GW otor located ath source) Fier 1 ng/kg	Soi (ree do	Coil Leaching to GW (receptor located dow ngradient) Tier 2		rface Soil outdoor Air	
	RBSL for	TPH (mg/kg)	5.3E+	04	So	oil res		Soil res	5	Soil Res	
Main	Menu	Site-Specifi	ic TPH RB	SLs in \$	Soil	Crude	e Oils	and Conde	ensat	es Databas	
Main Selec I	Menu t Sample Typ ☐ Oil ⊡ Soil Sit	Site-Specifi e: te-Specific TI Site Desc	ic TPH RBS PH Data cription:	SLs in S	Soil il	Crude	e Oils	and Conde	ensat ar Co	es Databas	
Main Seleci E PH Fraction	Menu t Sample Typ Oil Soil Sit	Site-Specific TI Site Desc Concentra (mg/kg s	ic TPH RB PH Data cription: ation F oil) 1	SLs in Soi in Soi raction	Soil il of H	Crude Adjusted N Fraction	e Oils Mass n	and Conde Cle Mass Fract Mole Fract	ensat ear Co ion,/ ion,	es Databas oncentratio Mole Fract (adj. for m balance),	
Main Select PH Fraction	Menu t Sample Typ Oil Soil Sit	Site-Specific TI Site Desc Concentra (mg/kg s	PH Data cription:	SLs in Soi	Soil il of H	Crude Adjusted M Fraction	e Oils Mass n	Mass Fract	ensat ar Co ion;/	es Databas oncentratio Mole Fract (adj. for ma balance),	
Main Select PH Fraction Jiphatics: 6-8 C aliph	Menu t Sample Typ Oil Soil Sit	Site-Specific TI Site Desc Concentra (mg/kg s	PH Data cription: ation F oil) 1	SLs in Soi	Soil	Crude Adjusted M Fraction 7.9E-02 4 1E-02	e Oils Mass n	Mass Fract Mole Fract	ensat ar Co ioni/	es Databas oncentratio Mole Fract (adj. for m balance), 1.1E-01 4.5E-01	
Main Select PH Fraction liphatics: 6-8 C aliph 10-12 C alip	Menu t Sample Typ Oil Soil Sit ns atics hatics phatics	Site-Specific TI Site Desc Concentra (mg/kg s	PH Data cription: ation F oil) 7	SLs in 3 in Soi raction fotal TP 7.9E-02 4.1E-01 2.0E-01	Soil il of H 1	Crude Adjusted N Fraction 7.9E-02 4.1E-07 2.0E-07	Mass n 2 1 1	Mass Fract Mole Fract 7.9E-04 3.1E-03 1.3E-03	ion,/ ion,i	Mole Fract (adj. for ma balance), 1.1E-01 4.5E-01 1.8E-01	
Main Select PH Fraction liphatics: 6-8 C aliph 8-10 C alip 10-12 C ali 12-16 C ali	Menu t Sample Typ Oil Soil Sit ns atics hatics phatics phatics	Site-Specific TI Site Desc Concentra (mg/kg s 6.1E+0 3.2E+0 1.6E+0 1.0E+0	PH Data cription: ation oil)	SLs in 3 in Soi raction fotal TP 7.9E-02 4.1E-01 2.0E-01 1.3E-01	Soil il of H 2 1 1 1	Crude Adjusted N Fraction 7.9E-02 4.1E-07 2.0E-07 1.3E-07	<b>Aass</b> n 2 1 1	Mass Fract Mole Fract 7.9E-04 3.1E-03 1.3E-03 6.5E-04	ion <sub>i</sub> /	Mole Fract (adj. for ma balance), 1.1E-01 4.5E-01 1.8E-01 9.4E-02	
Main Select PH Fraction Viphatics: 6-8 C aliph 10-12 C alip 10-12 C ali 12-16 C ali 12-16 C ali	Menu t Sample Typ Oil Soil Soil Sit ns atics hatics phatics phatics phatics	Site-Specific TI Site Desc Concentra (mg/kg s 6.1E+0 3.2E+0 1.6E+0 1.6E+0 5.0E+0	PH Data cription: ation oil) 1 2 2 2 1	SLs in 3 in Soi raction fotal TP 7.9E-02 4.1E-01 2.0E-01 1.3E-01 6.5E-02	Soil il of H 2 1 1 1 2	Crude Adjusted N Fraction 7.9E-02 4.1E-0 2.0E-0 1.3E-0 6.5E-02	Aass n 2 1 1 2	Mass Fract Mole Fract 7.9E-04 3.1E-03 1.3E-03 6.5E-04 2.4E-04	ensat ar Co ion,/ ion,/	Mole Fract (adj. for ma balance), 1.1E-01 4.5E-01 1.8E-01 9.4E-02 3.5E-02	
Main Select PH Fraction PH Fraction Aliphatics: 6-8 C aliph 5-10 C alip 10-12 C ali 12-16 C ali	Menu t Sample Typ Oil Soil Sit ns atics hatics phatics phatics phatics	Site-Specific TI Site Desc Concentra (mg/kg s 6.1E+0 3.2E+0 1.6E+0 1.0E+0 5.0E+0	ic TPH RB	SLs in 3 in Soi raction fotal TP 7.9E-02 4.1E-01 2.0E-01 1.3E-01 6.5E-02	Soil il of H 2 1 1 1 1 2	Crude Adjusted N Fraction 7.9E-02 4.1E-0 2.0E-0 1.3E-0 6.5E-02	Aass n 2 1 1 2	Mass Fract Mole Fract 7.9E-04 3.1E-03 1.3E-03 6.5E-04 2.4E-04	ion, / ion, / ion, i	Mole Fract (adj. for m balance), 1.1E-01 4.5E-01 1.8E-02 3.5E-02	
Main Select PH Fraction Aliphatics: -6-8 C aliph -10-12 C alip -10-12 C alip -10-12 C ali -10-14 C alip -10-14 C alip	Menu t Sample Typ Oil Soil Sit ns atics phatics phatics phatics phatics	Site-Specific TI Site Desc Concentra (mg/kg s 6.1E+0 3.2E+0 1.6E+0 1.0E+0 5.0E+0	ic TPH RB	SLs in 3 in Soi raction fotal TP 7.9E-02 4.1E-01 2.0E-01 1.3E-01 6.5E-02 4.7E-03	Soil	Crude Adjusted N Fraction 7.9E-02 4.1E-0 2.0E-0 1.3E-0 6.5E-02 4.7E-03	a         Oils           dass         n           2         1           1         2           3         3	Mass Fract Mole Fract 7.9E-04 3.1E-03 6.5E-04 2.4E-04	ar Co	es Databas oncentratio (adj. for m balance), 1.1E-01 1.8E-01 9.4E-02 3.5E-02	
Main Select E PH Fraction Aliphatics: -6-8 C aliph -8-10 C alip -10-12 C ali -10-12 C ali -10-12 C ali -10-44 C ali -10-44 C ali -7-8 C Arom -7-8 C Arom -8-10 C arom	Menu t Sample Typ Oil Soil Sit ns atics phatics phatics phatics phatics matics matics	Site-Specific TI Site Desc Concentra (mg/kg s 6.1E+0 3.2E+0 1.0E+0 5.0E+0 3.6E+0 4.9E+0	ic TPH RB	SLs in 3 in Soi raction fotal TP 7.9E-02 4.1E-01 2.0E-01 1.3E-01 6.5E-02 4.7E-03 6.4E-02	Soil	Crude Adjusted M Fraction 7.9E-02 4.1E-0 2.0E-0 1.3E-0 6.5E-02 4.7E-03 6.4E-02	Aass n 2 1 1 2 3 2 2	Mass Fract Mole Fract 7.9E-04 3.1E-03 6.5E-04 2.4E-04 5.1E-05 5.3E-04	ar Co	es Databas oncentratio (adj. for m balance), 1.1E-01 1.8E-01 9.4E-02 3.5E-02 7.3E-03 7.6E-02	
Main Select E PH Fraction Aliphatics: -6-8 C aliph -8-10 C alip -10-12 C ali -10-44 C ali -10-44 C ali -10-44 C ali -7-8 C Arom -8-10 C aron -7-8 C Arom -8-10 C aron -8-10 C aron -8-10 C aron -10-12 C aron -10-12 C aron -10-20 C aron	Menu t Sample Typ Oil Soil Sin sin atics phatics phatics phatics phatics matics matics matics matics matics matics	Site-Specific TI Site Desc Concentra (mg/kg s 6.1E+0 3.2E+0 1.0E+0 5.0E+0 3.6E+0 4.9E+0 1.7E+0	ic TPH RB	SLs in 3 in Soi raction fotal TP 7.9E-02 4.1E-01 2.0E-01 1.3E-01 6.5E-02 4.7E-03 6.4E-02 2.2E-02 4.4E-04	Soil	Crude Adjusted M Fraction 7.9E-02 4.1E-07 6.5E-02 4.7E-03 6.4E-02 2.2E-02 4.7E-03 6.4E-02 2.2E-02 4.7E-03	* Oils	Mass Fract Mole Fract 7.9E-04 3.1E-03 6.5E-04 2.4E-04 5.1E-05 5.3E-04 1.7E-04 4.27	ion, / ion, / ion, ion, ion	es Databas oncentratio Mole Fract (adj. for m balance), 1.1E-01 1.8E-01 9.4E-02 3.5E-02 7.3E-03 7.6E-02 2.4E-02 3.4E-	
Main Select PH Fraction Aliphatics: -6-8 C aliph -10-12 C alip -7-8 C Arom -8-10 C aron -7-8 C Arom -8-10 C aron -10-12 C aro -10-12 C aro -10-12 C aro -10-12 C aro -10-12 C aro	Menu t Sample Typ Oil Soil Sin sin atics hatics phatics phatics phatics phatics matics matics omatics romatics romatics	Site-Specific TI Site Desc Concentra (mg/kg s 6.1E+0 3.2E+0 1.0E+0 5.0E+0 3.6E+0 4.9E+0 1.7E+0 1.1E+0 2.0E+0	The second secon	SLs in 3 in Soi raction fotal TP 7.9E-02 4.1E-01 2.0E-01 1.3E-01 6.5E-02 4.7E-03 6.4E-02 2.2E-02 1.4E-02 3.2E-03	Soil il of H 2 1 1 1 1 2 2 2 2 2 2 3 3 4 4 5 5 6 1 1 1 1 1 1 1 1 1 1 1 1 1	Crude Adjusted M Fraction 7.9E-02 4.1E-07 6.5E-02 4.7E-03 6.4E-02 2.2E-02 1.4E-02 2.2E-02 1.4E-02 2.2E-02 1.4E-02 2.2E-02	* Oils	Mass Fract Mole Fract 7.9E-04 3.1E-03 6.5E-04 2.4E-04 5.1E-05 5.3E-04 1.7E-04 9.1E-05 2.0E of of of of other	ion, / ion, / ion, i ion, i i ion, i ion, i ion, i ion, i ion, i i i i i i i i i i i i i i i i i i i	es Databas oncentratio (adj. for m balance), 1.1E-01 1.8E-01 9.4E-02 3.5E-02 7.3E-03 7.6E-02 2.4E-02 1.3E-02 2.4E-02	
Main Select E PH Fraction Aliphatics: -6-8 C aliph -8-10 C alip -10-12 C ali -10-12 C ali -7-8 C Arom -8-10 C aron -7-8 C Arom -8-10 C aron -10-12 C aron -10-12 C aron -12-16 C aron -1	Menu t Sample Typ Oil Soil Sin Sin sins atics hatics phatics phatics phatics phatics matics omatics omatics omatics omatics omatics omatics	Site-Specific TI Site Desc Concentra (mg/kg s 6.1E+0 3.2E+0 1.0E+0 5.0E+0 3.6E+0 4.9E+0 1.7E+0 1.1E+0 2.9E+0 4.8E+0	ic TPH RBS	SLs in 3 in Soi raction fotal TP 7.9E-02 4.1E-01 2.0E-01 1.3E-01 6.5E-02 2.2E-02 1.4E-02 3.7E-03 6.2E-03	Soil il of H 2 2 2 2 2 3 3 3 4 5 5 5 5 5 5 5 5 5 5 5 5 5	Adjusted M Fraction 7.9E-02 4.1E-07 2.0E-07 1.3E-07 6.5E-02 4.7E-03 6.4E-02 2.2E-02 1.4E-02 3.7E-03 6.2E-01	e Oils flass n 2 1 1 1 2 2 2 2 2 2 3 3 3	Mass Fract Mole Fract 7.9E-04 3.1E-03 6.5E-04 2.4E-04 5.1E-05 5.3E-04 1.7E-04 9.1E-05 2.0E-05 2.3E-05	ion,/ ion,/ ion ion ion ion ion ion ion ion ion ion	es Databas oncentratio (adj. for ma balance), 1.1E-01 4.5E-01 9.4E-02 3.5E-02 7.3E-03 7.6E-02 2.4E-02 1.3E-02 2.4E-02 1.3E-02 2.8E-03 3.3E-03	
Main Select E PH Fraction Aliphatics: -6-8 C aliph -8-10 C alip -10-12 C ali -10-12 C ali -7-8 C Arom -8-10 C aron -7-8 C Arom -8-10 C aron -10-12 C aron -1	Menu t Sample Typ Oil Soil Sit ns atics phatics phatics phatics phatics matics omatics comatics to <c44< td=""><td>Site-Specific TI Site Desc Concentra (mg/kg s 6.1E+0 3.2E+0 1.6E+0 5.0E+0 3.6E+0 4.9E+0 1.7E+0 1.1E+0 2.9E+0 4.8E+0</td><td>ic TPH RBS</td><td>SLs in 3 in Soi raction fotal TP 7.9E-02 4.1E-01 2.0E-01 1.3E-01 6.5E-02 2.2E-02 1.4E-02 3.7E-03 6.2E-03 1.0E-01</td><td>Soil il of H 2 2 1 1 2 2 2 2 3 3 0 0</td><td>Adjusted M Fraction 7.9E-02 4.1E-0 2.0E-07 1.3E-07 6.5E-02 4.7E-03 6.4E-02 2.2E-03 1.4E-02 3.7E-03 6.2E-03 1.0E+00</td><td>e Oils dass n 2 1 1 2 3 2 2 2 3 3 0</td><td>Mass Fract Mole Fract 7.9E-04 3.1E-03 6.5E-04 2.4E-04 5.1E-05 5.3E-04 1.7E-04 9.1E-05 2.0E-05 2.0E-05 2.3E-05 2.3E-05</td><td>ion,/ ion,/ ion,i ion ion ion ion ion ion ion ion ion io</td><td>es Databas oncentratio Mole Fract (adj. for ma balance), 1.1E-01 4.5E-01 1.8E-01 9.4E-02 3.5E-02 2.4E-02 1.3E-02 2.4E-02 1.3E-02 2.4E-02 1.3E-02 2.4E-02 1.3E-02 2.4E-02 1.3E-02 2.4E-02 1.3E-02 2.4E-02 1.3E-02 2.4E-02 1.3E-02 2.4E-02 1.3E-02 2.4E-02 1.3E</td></c44<>	Site-Specific TI Site Desc Concentra (mg/kg s 6.1E+0 3.2E+0 1.6E+0 5.0E+0 3.6E+0 4.9E+0 1.7E+0 1.1E+0 2.9E+0 4.8E+0	ic TPH RBS	SLs in 3 in Soi raction fotal TP 7.9E-02 4.1E-01 2.0E-01 1.3E-01 6.5E-02 2.2E-02 1.4E-02 3.7E-03 6.2E-03 1.0E-01	Soil il of H 2 2 1 1 2 2 2 2 3 3 0 0	Adjusted M Fraction 7.9E-02 4.1E-0 2.0E-07 1.3E-07 6.5E-02 4.7E-03 6.4E-02 2.2E-03 1.4E-02 3.7E-03 6.2E-03 1.0E+00	e Oils dass n 2 1 1 2 3 2 2 2 3 3 0	Mass Fract Mole Fract 7.9E-04 3.1E-03 6.5E-04 2.4E-04 5.1E-05 5.3E-04 1.7E-04 9.1E-05 2.0E-05 2.0E-05 2.3E-05 2.3E-05	ion,/ ion,/ ion,i ion ion ion ion ion ion ion ion ion io	es Databas oncentratio Mole Fract (adj. for ma balance), 1.1E-01 4.5E-01 1.8E-01 9.4E-02 3.5E-02 2.4E-02 1.3E-02 2.4E-02 1.3E-02 2.4E-02 1.3E-02 2.4E-02 1.3E-02 2.4E-02 1.3E-02 2.4E-02 1.3E-02 2.4E-02 1.3E-02 2.4E-02 1.3E-02 2.4E-02 1.3E-02 2.4E-02 1.3E	
Main Select E PH Fraction Aliphatics: •6-8 C aliph •8-10 C alip •10-12 C ali •10-12 C ali •10-2 C ali •10-44 C ali •10-44 C ali •10-12 C ali •10-12 C ali •7-8 C Arom •8-10 C aron •10-12 C aron •10-12 C aron •10-12 C aron •10-12 C aron •21-44 C aron •21-44 C aron •21-44 C aron	Menu t Sample Typ Oil Soil Sit ns atics hatics phatics phatics phatics phatics matics omatics comatics	Site-Specific TI Site Desc Concentra (mg/kg s 6.1E+0 3.2E+0 1.6E+0 5.0E+0 3.6E+0 4.9E+0 1.7E+0 1.1E+0 2.9E+0 4.8E+0	ic TPH RBS	SLs in 3 in Soi raction fotal TP 7.9E-02 4.1E-01 2.0E-01 1.3E-01 6.5E-02 2.2E-02 1.4E-02 3.7E-03 6.2E-03 1.0E+00 0.0E+00	Soil il of H 2 1 1 2 2 2 2 3 3 0 0 0	Crude Adjusted M Fraction 7.9E-02 4.1E-0 2.0E-0 1.3E-0 6.5E-02 4.7E-02 6.4E-02 2.2E-02 1.4E-02 3.7E-03 6.2E-03 1.0E+00 0.0E+00	a Oils dass n 2 1 1 2 3 2 2 3 3 3 0 0	Mass Fract Mass Fract Mole Fract 7.9E-04 3.1E-03 6.5E-04 2.4E-04 5.1E-05 5.3E-04 1.7E-04 9.1E-05 2.0E-05 2.0E-05 2.0E-05 2.0E-03 2.0E-05 2.0E-03 2.0E-	ion <sub>i</sub> / ion <sub>i</sub> / ion <sub>i</sub> / iion <sub>i</sub> iion <sub>i</sub>	es Databas oncentratio (adj. for ma balance), 1.1E-01 4.5E-01 4.5E-01 1.8E-01 9.4E-02 3.5E-02 2.4E-02 1.3E-02 2.4E-02 1.3E-02 2.4E-02 1.3E-02 2.4E-02 1.3E-02 2.4E-02 1.3E-02 2.4E-02 1.3E-02 0.0E+000	
Main Select I I I I I I I I I I I I I I I I I I I	Menu t Sample Typ Oil Soil Sit ns atics phatics phatics phatics phatics matics omatics comatics comati	Site-Specific TI Site Desc Concentra (mg/kg s 6.1E+0 3.2E+0 1.6E+0 1.0E+0 5.0E+0 1.0E+0 1.7E+0 1.1E+0 2.9E+0 4.8E+0	ic TPH RBS	SLs in 3 in Soi raction of fotal TP 7.9E-02 4.1E-01 2.0E-01 1.3E-01 6.5E-02 2.2E-02 1.4E-02 3.7E-03 6.2E-03 1.0E+00 0.0E+00 1.0E+00	Soil il of H 2 1 1 2 2 2 3 3 2 2 2 3 3 0 0 0 0 0	Adjusted M Fraction 7.9E-02 4.1E-0 2.0E-0 4.7E-02 4.7E-02 6.5E-02 4.7E-02 6.4E-02 2.2E-02 1.4E-02 3.7E-03 6.4E-02 3.7E-03 6.4E-02 3.7E-03 6.4E-02 1.0E+00 1.0E+00 1.0E+00	e Oils dass n 2 1 1 2 3 2 2 3 3 3 0 0 0 0	Mass Fract Mass Fract Mole Fract 7.9E-04 3.1E-03 1.3E-03 1.3E-03 1.3E-04 2.4E-04 2.4E-04 9.1E-05 5.3E-04 1.7E-04 9.1E-05 2.0E-05 2.3E-05 3.3E-	ion <sub>i</sub> / ion <sub>i</sub> / ion <sub>i</sub> / iion <sub>i</sub> iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii	es Databas oncentratio (adj. for ma balance), 1.1E-01 4.5E-01 1.8E-01 9.4E-02 3.5E-02 2.4E-02 1.3E-02 2.4E-02 1.3E-03 3.3E-03 3.3E-03 1.0E+00	
Main           Select           Image: Construction of the second s	Menu t Sample Typ Oil Soil Sin soil Sin sin atics hatics phatics phatics phatics phatics phatics phatics omatics romatics romatics romatics to <c44 I TPH fractions</c44 	Site-Specific TI Site Desc Concentra (mg/kg s 6.1E+0 3.2E+0 1.6E+0 1.0E+0 5.0E+0 3.6E+0 4.9E+0 1.7E+0 1.1E+0 2.9E+0 4.8E+0 0 1.7E+0 7.72E+0 7.72E+0	ic TPH RBS	SLs in Soi in Soi raction fotal TP 7.9E-02 4.1E-01 2.0E-01 1.3E-01 6.5E-02 4.7E-03 6.4E-02 2.2E-02 1.4E-02 3.7E-03 6.4E-02 1.4E-02 3.7E-03 6.4E-02 1.4	Soil il of H 2 1 1 2 2 3 3 2 2 3 3 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1	Crude Adjusted N Fraction 7.9E-02 4.1E-0 2.0E-0 1.3E-0 6.5E-02 6.5E-02 1.3E-0 6.5E-02 1.3E-0 6.5E-02 1.3E-02 1.4E-02 3.7E-03 6.2E-03 1.0E+00 0.0E+00 1.0E+00	Alass n 2 1 1 1 2 2 2 2 2 2 2 2 2 2 3 3 0 0 0 0 0	and Conde           Cle           Mass Fract           Mole Fract           7.9E-04           3.1E-03           6.5E-04           2.4E-04           5.1E-05           5.3E-04           9.1E-05           2.0E-05           2.0E-05           2.3E-06           7.0E-03	ioni / ioni / io	es Databas oncentratio (adj. for ma balance), 1.1E-01 4.5E-01 1.8E-01 9.4E-02 3.5E-02 7.3E-03 7.6E-02 2.4E-02 1.3E-02 2.4E-02 1.3E-03 3.5E-03 1.0E+00 0.0E+00 1.0E+00	

Note: Data calculated using TX1006 data from excavation confirmation sample EC-1(R)

Soil Boring Logs





Client:       Enterprise Products Operating, LLC         Project Name:       S. Carlsbad Compressor Station         Project Location:       Off S. Carassco Rd, Carlsbad, NM         Project Manager:       B. Chris Mitchell, P.G.         DRILLING & SAMPLING INFORMATION         Date Started:       November 5, 2009         Date Completed:       November 5, 2009         Date Completed:       November 5, 2009         Drilling Company:       Straub Corporation         Driller:       Marty Straub         Geologist:       BCM         Boring Method:       AR         Screen Size:       Bore Hole Dia:         Boring Method:       AR         SAMPLER TYPE       CB - FIVE FOOT CORE BARREL         CFA - CONTINUOUS FLIGHT AUGERS       SS - DRIVEN SPLIT SPOON         GP GEOPBORE       SS - DRIVEN SPLIT SPOON	Soil Boring Number: B-1 Project #: 0210G003 Drawn By: JWM Approved By: BCM N/A N/A N: N/A DWATER DEPTH ETION
AR-AIR ROTARY STITRESSED SHELET TODE V AT WELL ST	Stratum Bepth Bobh Scapth No. Sample Intervi & Recovery Groundwater I
SILTY SAND, Gray, Dry, Petroleum Hydrocarbon Odor SANDY SILT, Pale Brown, Dry, Petroleum Hydrocarbon Odor SILTY SAND, Brown, Dry, No Odor BOTTOM OF BORING	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
Note: This log is not to be used outside the original report.	Southwest

Client:	Enterprise Products Operating, LLC
Project Name:	S. Carlsbad Compressor Station
Project Location:	Off S. Carassco Rd. Carlsbad. NM
Project Manager:	Joseph Martinez

	DRILLING & SAMPLING INFORMATION		Soil F	oring Num	uher:	B.	2		
Date Started	2.25.2011		Proie	ct #· (	1201. 7210	 GO(	<del>-</del> )3		
Date Completed:	2.25.2011		Draw	n Bv∙ – I	<u>10</u> WM				
Drilling Company:	Earth Worx		Appro	oved By:	BCM	1			
Driller:	Louis Truiillo		ppr		00.				
Geologist:	B. Chris Mitchell	Well Diam:	N/A						
Boring Method:	Geoprobe	Screen Size:	N/A						
Bore Hole Dia:	6-Inch	Screen Length	: N/A						
<b>BORING METHO</b> HSA - HOLLOW STEM CFA - CONTINUOUS F	D SAMPLER TYPE 1 AUGERS CB - FIVE FOOT CORE BARREL FLIGHT AUGERS SS - DRIVEN SPLIT SPOON	Casing Length: GROUND ▼ AT COMPLET	<u>N/A</u> WATER	DEPTH	_		spth	(udd) sj	BORING AND SAMPLING NOTES
GP - GEOPROBE AR - AIR ROTARY	ST - PRESSED SHELBY TUBE	T WELL ST	ABILIZA	FION	nterval	sry	ater Do	teading	
ail ail	SOIL CLASSIFICATION		atum	pth ale mple	mple Ir	Recove	wpuno	O/PID F	
SURFACE	ELEVATION:		Str De	Sci No	Sai	% F	Ğ	ЫF	
SILTY CL. Odor	AY with Sand, Gray, Dry, Petroleum Hyd	rocarbon						0 16 89 139 171 384 122 63	



Client:	Enterprise Products Operating, LLC
Proiect Name:	S. Carlsbad Compressor Station
Project Location:	Off S. Carassco Rd. Carlsbad. NM
Project Manager:	Joseph Martinez

	DRILLING & SAMPLING INFORMATION		Soil B	oring Nu	mber:	B-3		
Date Started:	2.25.2011		Projec	ct #:	0210	)G003		
Date Completed:	2.25.2011		_ Drawn By:JWM					
Drilling Company:	Earth Worx		Appro	oved By:_	BCM	1		
Driller:	Louis Trujillo		-					
Geologist:	B. Chris Mitchell	Well Diam:	N/A		_			
Boring Method:	Geoprobe	_Screen Size:	N/A		_			
Bore Hole Dia:	6-Inch	_Screen Length	: <u>N/A</u>		_			
BORING METHO HSA - HOLLOW STEN CFA - CONTINUOUS I GP - GEOPROBE AR - AIR ROTARY	AUGERS CB - FIVE FOOT CORE BARREL FLIGHT AUGERS S - DRIVEN SPLIT SPOON ST - PRESSED SHELBY TUBE	Casing Length: GROUND ⊈ AT COMPLET ⊈ AT WELL ST.	: <u>N/A</u> WATER FION ABILIZAT	<b>DEPTH</b> TON	nterval	BIY Mark Danih	Readings (ppm)	BORING AND SAMPLING NOTES
or Well	SOIL CLASSIFICATION		tum t	iple ft	iple I	SCOVE	PID F	
SURFACE	ELEVATION:		Stra Dep	Dep Scal San	San	% Ro	FID/	
Note: This	SILT with Sand, Gray, Dry, Petroleum Hy Refusal @ 8'	drocarbon			7		113 196 219 146 227 187 287 106	



Client:	Enterprise Products Operating, LLC
Proiect Name:	S. Carlsbad Compressor Station
Project Location:	Off S. Carassco Rd. Carlsbad. NM
Project Manager:	Joseph Martinez

		DRILLING & SAMPLING INFORMATION		Soil B	oring N	lumber	:_B-	4		
Date S	Started:	2.25.2011		Projec	ct #:	021	OGOC	)3		
Date (	Completed:	2.25.2011		_ Drawn By:						
Drilling	g Company: <u> </u>	Earth Worx		Appro	ved B	y: <u>BC</u>	М			
Driller	:	Louis Trujillo		-		_				
Geolo	gist:	B. Chris Mitchell	_ Well Diam:	N/A						
Boring	g Method:	Geoprobe	_Screen Size:	N/A						
Bore I	Hole Dia:	6-Inch	_Screen Length	: <u>N/A</u>						
<b>BO</b> HSA - I CFA - G GP - G AR - A	<b>RING METHO</b> HOLLOW STEM CONTINUOUS F EOPROBE IR ROTARY	D SAMPLER TYPE LAUGERS CB - FIVE FOOT CORE BARREL LIGHT AUGERS SS - DRIVEN SPLIT SPOON ST - PRESSED SHELBY TUBE	Casing Length GROUND T AT COMPLET T AT WELL ST.	: N/A WATER NON ABILIZAT	<b>DEPTH</b> 10N	Iterval	ery	vater Depth	Readings (ppm)	BORING AND SAMPLING NOTES
ar well		SOIL CLASSIFICATION		E R	ج ص .	ple I	COV	wpur	- DF	
Monito Detail	SURFACE I	ELEVATION:		Strat	Dept	Sam Sam	% Re	Grou	FID/F	
				<del>,</del> т	1 0/	5,2 5,	<u>p</u> .	ÿ	I	
	Odor Odor	Refusal @ 8'				3' + 4'			0 0 0 1155 107 67	
	Note: This I	log is not to be used outside the original repo	ort.							Toutburget



Client:	Enterprise Products Operating, LLC
Project Name:	S. Carlsbad Compressor Station
Project Location:	Off S. Carassco Rd. Carlsbad. NM
Project Manager:	Joseph Martinez

	DRILLING & SAMPLING INFORMATION	Soil E	Boring	Numb	er:	B-5		
Date §	Started: 2.25.2011	Proje	ct #:	02	210	G00.	3	
Date (	Completed: 2.25.2011	Draw	n By:_	JW	νM			
Drilling	g Company: Earth Worx	Appro	oved E	Зу: <u>В</u>	СМ			
Driller	Louis Trujillo			-				
Geolo	gist:B. Chris MitchellWell Diam:	N/A						
Boring	g Method: <u>Geoprobe</u> Screen Size:	N/A						
Bore I	Hole Dia: 6-Inch Screen Leng	th: <u>N/A</u>						
BO HSA - I CFA - G GP - G AR - AI	RING METHOD       SAMPLER TYPE         HOLLOW STEM AUGERS       CB - FIVE FOOT CORE BARREL       GROUND         CONTINUOUS FLIGHT AUGERS       SS - DRIVEN SPLIT SPOON       ▼ AT COMPL         EOPROBE       ST - PRESSED SHELBY TUBE       ▼ AT WELL S	th: <u>N/A</u> NDWATER ETION STABILIZAT	I <b>DEPT</b>	гн	terval	ry	ater Depth eadings (ppm)	BORING AND SAMPLING NOTES
well	SOIL CLASSIFICATION	Ę	5.0	ole	ole Ir	ove	Ndw.	
tonitor Detail	SUBFACE ELEVATION:	Stratu	Scale	samp Vo.	amp	6 Rec	Brou	
21	oorantee elle virmory.	0) []	0 1	υz	0)	8	U L	
	CLAYEY SILT with Sand, Tan and Gray, Dry, Petroleum Hydrocarbon Odor Refusal @ 8'			4' - 5'			0 18 30 38 186 130 108 67	
	Note: This log is not to be used outside the original report.							



Client:	Enterprise Products Operating, LLC
Proiect Name:	S. Carlsbad Compressor Station
Project Location:	Off S. Carassco Rd. Carlsbad. NM
Project Manager:	Joseph Martinez

	DRILLING & SAMPLING INFORMATION	Soil E	oring Num	nber:	B-6		
Date S	Started: 2.25.2011	_ Proje	ct #:(	0210	G003		
Date C	Completed: 2.25.2011	_ Draw	n By: <u>J</u>	WM			
Drilling	g Company: Earth Worx	_ Appro	oved By:	BCM			
Driller:	Louis Trujillo	_					
Geolog	gist: B. Chris Mitchell Well Diam:	N/A					
Boring	Method: <u>Geoprobe</u> Screen Size:	N/A					
Bore H	Hole Dia: 6-Inch Screen Lengt	h: <u>N/A</u>					
	Casing Lengtl	n: <u>N/A</u>					
BOI HSA - F	RING METHOD SAMPLER TYPE HOLLOW STEM AUGERS CB - FIVE FOOT CORE BARREL GROUN	DWATER	DEPTH			(udd	BORING AND
CFA - C	CONTINUOUS FLIGHT AUGERS SS - DRIVEN SPLIT SPOON	ETION		_	epth	gs (f	SAMPLING NOTES
AR - Al	R ROTARY ST - PRESSED SHELBY TUBE  ▼ AT WELL S	TABILIZAT	FION	erval	er D	, uibe	
5		~		e Inte	very	Rea	
ail v	SOIL CLASSIFICATION	pth	pth mple	mple	secc	JI4/0	
Mor Deta	SURFACE ELEVATION:	Str	Sai No	Sai	% F Gro	FIL	
	SILTY CLAY Dark Brown Dry No Odor	$\langle \rangle \rangle$			1	0	
1			1			0	
1	CLAYEY SILT with Sand, Gray, Dry, Petroleum Hydrocarbon	fiffi	1			44	
1 1	Odor	1111	1			82	
		200	4' - 5'			140	
		1111	5 -			100	
		1111				119	
		1111	7' - 8'			67	
	Refusal @ 8'						
			10				
			10				
1 1			1				
1 1							
1			1				
1			1				
1 1			1				
1			1				
	Note: This log is not to be used outside the original report.						Toutburget



Client:	Enterprise Products Operating, LLC
Proiect Name:	S. Carlsbad Compressor Station
Project Location:	Off S. Carassco Rd. Carlsbad. NM
Project Manager:	Joseph Martinez

		DRILLING & SAMPLING INFORMATION		Soil B	oring Nu	umber	B-7		
Date 9	Started:	2.25.2011		Projec	ct #:	0210	)GOO	3	
Date (	Completed:	2.25.2011		Drawr	ם By:	JWM			
Drillin	g Company:_	Earth Worx		Appro	oved By:	BCN	4		
Driller	:	Louis Trujillo		-			_		
Geolo	gist:	B. Chris Mitchell	Well Diam:	N/A					
Boring	g Method:	Geoprobe	Screen Size:	N/A					
Bore I	Hole Dia:	6-Inch	Screen Length:	<u>N/A</u>					
BO HSA - I CFA - G GP - G AR - A	<b>RING METHOI</b> HOLLOW STEM CONTINUOUS FI EOPROBE IR ROTARY	AUGERS CB - FIVE FOOT CORE BARREL LIGHT AUGERS S - DRIVEN SPLIT SPOON ST - PRESSED SHELBY TUBE	Casing Length: GROUND ∑ AT COMPLET ∑ AT WELL ST	<u>N/A</u> WATER ION ABILIZAT	<b>DEPTH</b> ION	nterval	ery	/ater Depth 2eadings (mmm)	BORING AND SAMPLING NOTES
ar Well		SOIL CLASSIFICATION		m 4	e ple	ple I	COV	Mpur 4 Cic	
Monito Detail	SURFACE E	ELEVATION:		Strat	Scale Scale	No.	% Re	Grot	
	or		1	11111				-	
	Petroleum	Hydrocarbon Odor Refusal @ 8'				- 3'			
	Note: This l	og is not to be used outside the original repo	ort.	•					Conthruget



Client:	Enterprise Products Operating, LLC
Proiect Name:	S. Carlsbad Compressor Station
Project Location:	Off S. Carassco Rd. Carlsbad. NM
Project Manager:	Joseph Martinez

	DRILLING & SAMPLING INFORMATION	Soil B	oring N	lumber	: <u>B-</u> 8	5	
Date S	itarted: 2.25.2011	_ Projec	ct #:	0210	)G00	3	
Date C	Completed: 2.25.2011	Draw	n By:	JWM			
Drilling	g Company: Earth Worx	_ Appro	oved B	y: <u>BCN</u>	М		
Driller:	Louis Trujillo						
Geolog	gist:B. Chris MitchellWell Diam:	N/A					
Boring	Method: Geoprobe Screen Size:	N/A					
Bore H	Iole Dia: <u>6-Inch</u> Screen Length	n: <u>N/A</u>					
BOF HSA - H CFA - C GP - GE AR - AIF	Casing Length SAMPLER TYPE IOLLOW STEM AUGERS CD - FIVE FOOT CORE BARREL CD - FIVE FOOT CORE BARREL CD - FIVE FOOT CORE BARREL SS - DRIVEN SPLIT SPOON SS - DRIVEN SPLIT SPOON ST - PRESSED SHELBY TUBE ▼ AT WELL ST TO APPLE	n: <u>N/A</u> DWATER TION FABILIZAT	<b>DEPTH</b>	Iterval	ery	vater Depth Readings (ppm)	BORING AND SAMPLING NOTES
x well	SOIL CLASSIFICATION	E E	e Đ	ple I	COV	VDIL UIA	
Monite	SURFACE ELEVATION:	Strat	Scal	Sam No. Sam	% Re	Grot FID/I	
		ratara				· · · ·	
	CLAYEY SILT with Sand, Tan, Dry, No Odor SILTY CLAY, Gray, Dry, Petroleum, Hydrocarbon Odor		- - - 5 —	4' - 5'		0 0 0 212	
	SILTY SAND, Tan, Dry, No Odor			71.01		0	
	Refusal @ 8!	00000	-	7-8		0	
	notusui e o		-				
			10				
			-				
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<u> </u>	Note: This log is not to be used outside the original report		L				



Client:	Enterprise Products Operating, LLC
Project Name:	S. Carlsbad Compressor Station
Project Location:	Off S. Carassco Rd. Carlsbad. NM
Project Manager:	Joseph Martinez

	DRILLING & SAMPLING INFORMATION		Soil B	oring N	lumber	<u>B-9</u>		
Date	Started: 2.25.2011		Projec	ct #:	0210	)G003	8	
Date	Completed: 2.25.2011		Drawr	n By:	JWM			
Drillin	g Company: Earth Worx		Appro	ved By	/: <u>BCN</u>	4		
Driller	r: Louis Trujillo				-			
Geolo	ogist: B. Chris Mitchell Well D	iam: <u>1</u>	N/A					
Borin	g Method: <u>Geoprobe</u> Screen	n Size:	N/A					
Bore	Hole Dia: 6-Inch Screen	n Length:	N/A					
BC HSA - CFA - GP - C AR - A	Casing     Casing       PRING METHOD     SAMPLER TYPE       HOLLOW STEM AUGERS     CB - FIVE FOOT CORE BARREL     C       CONTINUOUS FLIGHT AUGERS     CS - DRIVEN SPLIT SPOON     ▼ AT       EOPROBE     ST - PRESSED SHELBY TUBE     ▼ AT	g Length: GROUNDW COMPLETIC WELL STAE	<u>N/A</u> VATER DN BILIZAT	<b>DEPTH</b> ION	H Iterval	N.	arer Depur	BORING AND SAMPLING NOTES
well .	SOIL CLASSIFICATION		Ę		ole Ir	COVE	MDI F	
Monitor Detail	SURFACE ELEVATION:		Stratu Deptl	Scale	Samp	6 Rei	no ie Plofe	
~ 1			0	10)	<u>, , , , , , , , , , , , , , , , , , , </u>	5	J L	
				- - - 5 _	4' - 5'		0 0 0 0 0	
	SANDY SILT, Tan, Dry, No Odor			-	7' - 8'		0	
	Refusal @ 8'							
				2				
•	Note: This log is not to be used outside the original report.							





ATTACHMENT D

Photographic Documentation



1.) View from east portion of excavation, looking west.



2.) View from west portion of excavation, looking east.



3.) View of landfarm treatment cell on northern portion of Site, looking east.



5.) View of landfarm treatment activities on northern portion of Site, looking east.



4.) View of landfarm treatment cell on south portion of the Site, looking west.



6.) View of landfarm treatment activities on south portion of Site, looking west.





7.) View landfarm tilling/raking activities on southern portion of Site, looking east.



9.) View of excavation backfill activities, looking west.



8.) View landfarm treatment activities on north portion of Site, looking east.



10.) View of excavation backfill activities, looking west/northwest.



11.) View of area near soil borings B-3 and B-6, looking northwest.



12.) View of treated soils stockpiled on northwest portion of the Site.





ATTACHMENT E

Supporting Documentation

ATTACHMENTE



#### Supplemental CAWP

Enterprise Products Operating LLC S. Carlsbad Compressor Station Carrasco Road and CR 710 Carlsbad, Eddy County, New Mexico



Water Well Location Summary Map

Google Earth 2013

SWG Project No. 0210G003

Note: Locations adjusted based on field survey observations



## New Mexico Office of the State Engineer Wells with Well Log Information

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)	(R=POD has been replace O=orphaned, C=the file is closed)	d, , (c	quarters : (qı	are 1=N uarters a	W 2=N are sm	NE 3=SW 4=SI allest to larges	E) st) (N/	AD83 UTM in	meters)					(in fe	eet)		
POD Number	POD Sub- Code basin	County S	Source	q q q 6416 4	Sec	Tws Rng	x	Y	Distar	nce S	Start Date	Finish Date	Log File Date	Depth Well	Depth Water	Driller	License Number
C 03053	С	ED	Shallow	344	12	23S 27E	581122	3575505* (	<b>)</b> '	164 (	)3/16/2004	03/17/2004	04/12/2004	94	14		1348
Record Count: 1																	 
UTMNAD83 Ra	dius Search (i	n meter	rs):														
Easting (X):	581286.13		ľ	Northin	ig (Y)	3575508.4	16	F	Radius: 4	450							

#### \*UTM location was derived from PLSS - see Help



## New Mexico Office of the State Engineer Wells Without Well Log Information

(A CLW##### in the<br/>POD suffix indicates the<br/>POD has been replaced(R=POI<br/>been re<br/>O=orph<br/>C=the f<br/>water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest)

(NAD83 UTM in meters)

		POD			q	q	q						
POD Number	Code	Subbasin	County	Source	64	16	4	Sec	Tws	Rng	Х	Y	Distance
<u>C 03457</u>		С	ED		3	4	4	12	23S	27E	581081	3575530 🍯	206
<u>C 00069</u>			ED	Shallow	3	3	3	07	23S	28E	581526	3575510* 🍯	239
<u>C 00461</u>			ED	Shallow	1	1	1	18	23S	28E	581526	3575307* 🧲	313

Record Count: 3

#### UTMNAD83 Radius Search (in meters):

Easting (X): 581286.13

Northing (Y): 3575508.46

**Radius:** 450

\*UTM location was derived from PLSS - see Help



## New Mexico Office of the State Engineer Point of Diversion Summary

		(quart	ers are 1=	NVV 2=	NE 3=	:5VV 4=5E)	) (NIA Doo II	-	
		(qua	rters are s	mailest	to larg	gest)	(NAD83 U	i ivi in meters)	
	POD Number	Q64	Q16 Q4	Sec	Iws	Rng	Х	Y	_
	C 03053	3	4 4	12	23S	27E	581122	3575505*	9
Driller License	: TAYLOR WATE	R WELL SE	RVICE						
Driller Name:									
Drill Start Date	e: 03/16/2004	Drill Fini	sh Date	:	03/1	17/2004	Plug	Date:	
Log File Date:	04/12/2004	PCW Rc	v Date:				Sou	ce:	Shallow
Pump Type:		Pipe Dis	Pipe Discharge Size:					nated Yiel	<b>d:</b> 5
Casing Size:	5.00	Depth W	ell:		94 f	eet	Dept	h Water:	14 feet
Wa	ter Bearing Stratif	ications:	Тор	Botte	om	Descrip	tion		
			56		94	Sandsto	ne/Gravel	/Conglome	rate
	Casing Per	forations:	Тор	Botte	om				
			54		۵ı				

\*UTM location was derived from PLSS - see Help



## New Mexico Office of the State Engineer Point of Diversion Summary

		(quarto) (quar	ers are rters are	1=NW e smalle	E) (NAD83 UT	) (NAD83 UTM in meters)		
	POD Number	Q64	Q4 Se	c Tws	Rng	X	Ŷ	
	C 03457	3	4	4 12	2 23S	27E	581081	3575530 🌍
Driller Licens Driller Name:	e:							
Drill Start Date:		Drill Finis	sh Da	Plug Date:				
Log File Date:		PCW Rcv	/ Date	Source:				
Pump Type:	Pipe Disc	Pipe Discharge Size:					Estimated Yield:	
Casing Size:	7.00	Depth We	ell:		200	feet	Dept	h Water:



## New Mexico Office of the State Engineer Point of Diversion Summary

		(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) (NAD83 UTM in meters)									
	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y		
	C 00069	3	3	3	07	23S	28E	581526	3575510*	9	
Driller License Driller Name:	e:										
Drill Start Date:		Drill Fini	Drill Finish Date:					Plug Date:			
Log File Date:	:	PCW Rc	v Dat	e:		02/1	6/1949	Sou	rce:	Shallow	
Pump Type:	TURBIN	Pipe Dis	Pipe Discharge Size:					Estimated Yield:			
Casing Size:	18.00	Depth W	ell:					Dept	th Water:		

\*UTM location was derived from PLSS - see Help


# New Mexico Office of the State Engineer Point of Diversion Summary

		(quarters are 1=	NW 2=NE 3=	=SW 4=SE)		
		(quarters are s	mallest to lare	gest) (	NAD83 UTM in mete	ers)
	POD Number	Q64 Q16 Q4	Sec Tws	Rng	Х	Y
	C 00461	1 1 1	18 23S	28E	581526 357530	7* 🌍
Driller Licens	e:					
Driller Name:	J.R. JOLLEY					
Drill Start Dat	te:	Drill Finish Date	:		Plug Date:	
Log File Date	:	PCW Rcv Date:	06/0	07/1956	Source:	Shallow
Pump Type:	TURBIN	Pipe Discharge	Size:		Estimated Y	<b>ield:</b> 100
Casing Size:		Depth Well:			Depth Water	:

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.



May 9, 2012

ENTERPRISE PRODUCTS PARTNERS L.P. ENTERPRISE PRODUCTS HOLDINGS LLC (General Partner) ENTERPRISE PRODUCTS OPERATING LLC

### RECEIVED OCD

2012 MAY 11 A 10:40

Return Receipt Requested 7010 1870 0001 2945 3057

Mr. Mike Bratcher New Mexico Oil Conservation Division - District 2 811 S. First Street Artesia, New Mexico 88210

#### RE: Corrective Action Report Enterprise S. Carlsbad Compressor Station SE ¼ of SE ¼ in S12, T23S, R27E Carlsbad, Eddy County, New Mexico

Dear Mr. Bratcher:

Enterprise Products Operating LLC (Enterprise) is submitting the enclosed *Corrective Action Report* dated May 1, 2012 for the Enterprise S. Carlsbad Compressor Station (referred to as the "Site" hereinafter). The Site is located at the northwest intersection of Carrasco Road and CR 710, approximately ten (10) miles southeast of Carlsbad, in Eddy County, New Mexico [SE ¼, SE ¼, Section 12, Township 23S, and Range 27E]. The Site is currently operating as natural gas compressor station operated by Enterprise. The purpose of the *Corrective Action Report* is to provide documentation of investigation and corrective action activities performed at the Site as a result of identified historical petroleum hydrocarbons liquids leakage.

Based on the results of the investigation and corrective action activities, it is believed that the source area has been delineated horizontally for petroleum hydrocarbon COCs with the exception of the area to the immediately north, northeast, and east of the former tank battery. Based on laboratory analytical results of the soil confirmation sample collected from the excavation floor, the soil samples collected from the initial soil boring, and the lithology encountered at the Site, it is believed that the source area has been vertically delineated. It is anticipated that the area of affected soils left in-place is primarily limited to the upper 8 or 9 feet of surface soils, based on the established presence of a sandstone formation encountered near this depth. Thus, it is believed that petroleum hydrocarbon COCs spread out horizontally from the source area after encountering the sandstone unit.

It is believed that the corrective actions documented herein have addressed soils which were most heavily impacted as a result of historic leakage originating from the former on-Site tank battery. Numerous aboveground and/or underground appurtenances related to natural gas streaming and/or refining operations exist within these areas. Thus, excavation activities in the vicinity of the affected soils remaining in place would not be feasible.

Based on the results of the corrective actions, Enterprise formerly request closure of the small landfarm permit issued for the Site and authorization for reuse of the treated soils, on or off-Site. Enterprise has proposed to request a variance of alternative abatement requirements or standards from the OCD, in accordance with NMAC 19.15.30.9, based on the technical infeasible access of surface soils in the vicinity of soil borings B-3 and B-6 and excavation confirmation soil sample EC-1(R). Should the OCD conclude that no further action is required at the Site or closure of the small landfarm permit is appropriate, Enterprise respectfully requests a written response which documents the decision. Should you have any questions, comments or concerns, or need additional information, please feel free to contact me at 713-381-6629.

P. O. BOX 4324 HOUSTON, TX 77210-4324 713.381.6500 1100 LOUISIANA STREET HOUSTON, TX 77002-5227 www.eppip.com Mr. Mike Bratcher New Mexico Oil Conservation Division May 9, 2012 Page 2

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Sincerely, 5

Rodney M. Sartor, REM Manager, Remediation

cc: James Heap, Enterprise Products Joseph Martinez, Southwest Geoscience

#### CORRECTIVE ACTION REPORT

Property:

S. Carlsbad Compressor Station NWC of Carrasco Road and CR 710 Carlsbad, Eddy County, New Mexico (OCD Permit No. 2R-422)

> May 1, 2012 SWG Project No. 0210003

> > Prepared for:

Enterprise Products Operating LLC 1100 Louisiana Street, Suite 1000 Houston, Texas 77002 Attention: Mr. Rodney Sartor

Prepared by:

Jo≸eph W. Martinez

Manager, South Texas

B. Chris Mitchell, P.G. Principal Geoscientist



8829 Tradeway Street San Antonio, Texas 78217 Phone: (210) 804-9922 ➡ Fax: (210) 804-9944 ➡



#### TABLE OF CONTENTS

1.0	INTRODUCTION11.1Site Description & Background11.2Site Ranking21.3Project Objective21.4Standard of Care & Limitations2	2. 2. 2.
2.0	SITE INVESTIGATION	\$ \$
	2.2       Son Samping Program       4         2.3       Laboratory Analytical Methods       4         2.4       Data Evaluation       4	÷ ŀ
3.0	CORRECTIVE ACTIONS53.1 Excavation and Treatment Activities53.2 Confirmation Soil Sampling63.3 Laboratory Analytical Methods73.4 Data Evaluation73.4.1 Tier 1 Evaluation73.4.2 Tier 2 Evaluation93.5 Closure Activities10	;;;;,,,))
4.0	FINDINGS AND RECOMMENDATIONS 11	

#### LIST OF APPENDICES

Appendix A:	Figure 1 – Topographic Map Figure 2 – Site Vicinity Map Figure 3 – Site Map
Appendix B:	Photographic Documentation
Appendix C:	Soil Boring Logs
Appendix D:	Tables
Appendix E:	Laboratory Data Reports & Chain of Custody Documentation

## Southwest

#### CORRECTIVE ACTION REPORT

S. Carlsbad Compressor Station NWC of Carrasco Road and CR 710 Carlsbad, Eddy County, New Mexico (OCD Permit No. 2R-422)

SWG Project No. 0210003

#### 1.0 INTRODUCTION

#### 1.1 Site Description & Background

Southwest Geoscience (SWG) has completed a Corrective Action Report for the Enterprise Products Operating LLC (Enterprise) S. Carlsbad Compressor Station located at northwest corner of Carrasco Road and CR 710, approximately ten (10) miles southeast of Carlsbad in Eddy County, New Mexico [SE1/4 of SE1/4 of S12, T23S, R27E], referred to hereinafter as the "Site" or "subject Site." The Site is currently improved as a natural gas compressor station.

A topographic map depicting the location of the Site is included as Figure 1 and a site vicinity map is included as Figure 2 of Appendix A. A site map depicting on-site improvements and the location of investigation and corrective action activities, described herein, is included as Figure 3 in Appendix A.

Natural gas condensate and produced water are separated from the natural gas stream which is processed at the Site. The liquids separated from the natural gas stream are stored in on-site storage tanks pending off-site disposal. The Site is currently improved with a tank battery on the western portion of the Site that includes six (6) above-ground storage tanks (ASTs) with approximate 90 to 300 barrel (bbl) storage capacities. The existing tank battery was constructed subsequent to the 2007 decommissioning and removal of the historic tank battery formerly located on the south/southwest portion of the Site. Field operations personnel identified stained soils indicative of historical leakage prior to and during the decommissioning of the former on-Site tank battery.

Initial site investigation activities were conducted at the Site by SWG in November of 2009 to evaluate the presence of petroleum hydrocarbons in surface and subsurface soils as a result of historical petroleum hydrocarbon liquids storage and processing activities in the vicinity of the former on-site tank battery. The initial site investigation activities included the advancement of one (1) soil boring (B-1) to a depth of 20 feet below ground surface (bgs). Two soil samples were collected from soil boring B-1 and submitted for total petroleum hydrocarbon (TPH) gasoline range organics (GRO)/diesel range organics (DRO) and benzene, toluene, ethylbenzene, and xylenes (BTEX) analysis utilizing EPA method SW-846 #8015M and SW-846 #8021B, respectively. Based on the laboratory analytical results, the soil sample collected from soil boring B-1 did not exhibit TPH GRO/DRO, benzene, or total BTEX concentrations in exceedance of the New Mexico Energy, Minerals and Natural Resources Department (EMNRD) Oil Conservation Division's (OCD) *Remediation Action Levels* are presented on Table 1 of Appendix D.

#### 1.2 Site Ranking

SWG referenced guidance and regulations published by the OCD to estimate the environmental sensitivity of the site. In accordance with the OCD's *Guidelines for Remediation of Leaks, Spills and Releases,* SWG utilized the general site characteristics to determine the appropriate "ranking" for the Site. The ranking criteria and associated scoring are provided in the table below:

Rankir	ng Critéria		Ranking Score
	<50 feet	20	
Depth to Groundwater	50 to 99 feet	10	10
	>100 feet	0	
Wellhead Protection Area • <1,000 feet from a water	Yes	20	
source, or; <200 feet from private domestic water source.	No	0	0
Dictores to Surface Water	<200 feet	20	
Body	200 to 1,000 feet	10	0
Body	>1,000 feet	0	
Total Ranking Score	10		

Based on area water well database records obtained through the New Mexico State Office of the Engineer, the depth to groundwater in the vicinity of the Site is estimated to be 78 feet bgs. In addition, the water well database records did not identify water wells within 1,000 feet of the Site. A concrete-lined irrigation canal was identified approximately 75 feet south of the source area. However, this feature was not included in the Site ranking given the presence of an engineering control (i.e.: concrete lining) which would prevent infiltration of COCs originating from the former on-site tank battery.

Based on SWG's review of Site characteristics (specifically: depth to groundwater, wellhead protection area and distance to surface water) an associated ranking score of ten (10) was determined for the Site in accordance with the OCD's *Guidelines for Remediation of Leaks, Spills and Releases.* Consequently, the OCD's *Remediation Action Levels* for the on-Site soils are 10 milligrams per kilogram (mg/Kg) benzene, 50 mg/Kg total BTEX and 1,000 mg/Kg TPH GRO/DRO.

#### 1.3 Project Objective

SWG performed supplemental site investigation activities to further evaluate the presence of petroleum hydrocarbons in the vicinity of the former tank battery as a result of historical petroleum hydrocarbon liquids storage and processing activities. In addition, corrective action activities were performed at the Site to reduce concentrations of petroleum hydrocarbon COCs in on-site soil below the OCD *Remediation Action Levels*.

#### 1.4 Standard of Care & Limitations

The findings and recommendations contained in this report represent SWG's professional opinions based upon information derived from the on-Site activities and other services performed under this scope of work and were prepared in accordance with currently acceptable professional standards. The findings were



based upon analytical results provided by an independent laboratory. Evaluations of the geologic/hydrogeologic conditions at the Site for the purpose of this investigation are made from a limited number of available data points (i.e. soil borings) and Site-wide subsurface conditions may vary from these data points. SWG makes no warranties, express or implied, as to the services performed hereunder. Additionally, SWG does not warrant the work of third parties supplying information used in the report (e.g. laboratories, regulatory agencies, or other third parties).

This report is based upon a specific scope of work requested by Enterprise. The agreement between SWG and Enterprise outlines the scope of work, and only those tasks specifically authorized by that agreement or outlined in this report were performed. This report has been prepared for the intended use of Enterprise and it's subsidiaries, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the Site) is prohibited without the express written authorization of Enterprise and SWG.

#### 2.0 SITE INVESTIGATION

#### 2.1 Soil Borings

In February of 2011, supplemental site investigation activities were conducted in the vicinity of the former tank battery to further to evaluate the magnitude and extent of petroleum hydrocarbons in the on-site soils as a result of historical petroleum hydrocarbon liquids storage and processing activities. The supplemental site investigation activities were conducted by B. Chris Mitchell, P.G., a SWG environmental professional. As part of the approved scope of work, eight (8) additional soil borings (B-2 through B-9) were advanced to a refusal depth of 8 feet The soil borings were advanced utilizing direct-push technology under the bgs. supervision of a New Mexico licensed water well driller. The soil cores were collected continuously utilizing a split-spoon sampler via Geoprobe® to the terminus depth of each soil boring. Soil borings B-2, B-3, and B-4 were advanced east of the former tank battery and vertical separator; soil borings B-5 and B-6 were advanced northeast of the former tank battery; soil boring B-7 was advanced north of the former tank battery; soil boring B-8 was advanced south of the former tank battery; and soil boring B-9 was advanced southeast of the former tank battery. Figure 3 is a site map which indicates the approximate location of the soil borings in relation to pertinent land features and on-site improvements (Appendix A). Photographic documentation of field investigation activities is available in Appendix B.

Soil core samples were observed to document soil lithology, color, moisture content, and visual and olfactory evidence of petroleum hydrocarbons. Upon retrieval of each sample from the borehole, each soil sample was immediately divided into portions designated for field screening or laboratory analysis. Field headspace analysis was conducted by placing the portion of the soil sample designated for field screening into a plastic Ziploc<sup>®</sup> bag. The plastic bag was sealed and then placed in a warm area to promote volatilization. The air above the sample, the headspace, was then evaluated using a photoionization detector (PID) capable of detecting volatile organic compounds (VOCs). The PID was calibrated utilizing an isobutylene standard prior to use in the field.

During the completion of each soil boring, an on-site geoscientist documented the lithology encountered and constructed a continuous profile of the soil column from the surface to the boring terminus. Undisturbed soil samples from each soil boring location were visually inspected and logged in the field. The lithology encountered



during the advancement of soil boring B-2 included a gray silty clay with sand from the ground surface to a refusal depth of approximately 8.0 feet bgs. The lithology encountered in soil borings B-3 through B-9 included a gray clayey silt, a dark brown silty clay, a tan silty sand, or other lithology similar to that observed in soil boring B-2. Soil borings B-3 through B-9 were advanced to a refusal depth of 8.0 feet bgs. Groundwater was not observed in the soil borings advanced at the Site. Detailed lithologic descriptions and field screening results are presented on the soil boring logs included in Appendix C.

Petroleum hydrocarbon odors were detected in the field in soil cores collected from soil borings B-2 through B-8. The PID readings from soil borings B-2 through B-9 ranged from zero (0) to 384 ppm. The highest PID reading was observed in the soil sample collected from soil boring B-2 at a depth of 5 to 6 feet bgs. Field screening results are presented on soil boring logs included in Appendix C.

#### 2.2 Soil Sampling Program

SWG's soil sampling program involved submitting up to two (2) soil samples from soil borings B-3 through B-9. The soil samples were collected from the zone exhibiting the highest PID reading, from a change in lithology, or from the bottom of the boring, based on the field professional's judgment. A soil sample was not collected from soil boring B-2. Soil sample intervals are presented with the soil sample analytical results (Table 1) in Appendix D and are provided on the soil boring logs included in Appendix C.

#### 2.3 Laboratory Analytical Methods

The soil samples collected from the soil borings were analyzed for TPH GRO/DRO and BTEX utilizing EPA SW-846 method #8015M and EPA SW-846 method #8021B, respectively. Laboratory analytical results are summarized in the tables included in Appendix D. The executed chain-of-custody form and laboratory data sheets are provided in Appendix E.

Sampling equipment was cleaned using an Alconox® wash and potable water rinse prior to the beginning of the project and before the collection of each sample. Soil samples were collected and placed in laboratory prepared glassware, sealed with custody tape and placed on ice in a cooler, which was secured with a custody seal. The sample coolers and completed chain-of-custody forms were relinquished to ERMI Environmental Laboratories (ERMI) in Allen, Texas on standard turnaround.

ERMI performed the analyses of samples under an adequate and documented quality assurance program to meet the project and data quality objectives. The laboratory's quality assurance program is generally consistent the quality standards outlined in the National Environmental Laboratory Accreditation Program, as amended. In addition, the data generated by ERMI meets the intralaboratory performance standards for the selected analytical method and the performance standards are sufficient to meet the bias, precision, sensitivity, representativeness, comparability, and completeness, as specified in the project data quality objectives.

#### 2.4 Data Evaluation

The Site is subject to regulatory oversight by the New Mexico EMNRD OCD. To address activities related to crude oil/condensate related releases, the OCD utilizes the *Guidelines for Remediation of Leaks, Spills and Releases* as guidance, in addition to the OCD rules, specifically New Mexico Administrative Code (NMAC)



19.15.30 Remediation. These guidance documents establish investigation and abatement action requirements for sites subject to reporting and/or corrective action. SWG compared the TPH GRO/DRO, benzene, and total BTEX concentrations or sample reporting limits (SRLs) associated with the soil samples collected from the soil borings to the OCD *Remediation Action Levels*. The results of the soil sample analysis along with the respective OCD *Remediation Action Levels* for the soil samples collected from soil borings B-3 through B-9 is provided in Table 1 of Appendix D.

#### Total Petroleum Hydrocarbons

The soil samples collected from soil borings B-3 (6-7), B-5 (4-5), B-6 (7-8), B-7 (5-6), and B-8 (4-5) exhibited TPH GRO/DRO concentrations ranging from 2,440 mg/Kg to 6,900 mg/Kg, which exceed the OCD *Remediation Action Level* of 1,000 mg/Kg. The remaining soil samples collected from the soil borings at the Site did not exhibit TPH GRO/DRO concentrations in exceedance of the OCD *Remediation Action Levels*.

#### Benzene and total BTEX

The soil samples collected from soil borings B-3 through B-9 did not exhibit benzene concentrations in exceedance of the OCD *Remediation Action Levels*.

The soil samples collected from soil boring B-3 (6-7) and B-6 (7-8) exhibited total BTEX concentrations in exceedance of the OCD *Remediation Actions Levels*. The remaining soil samples collected from the soil borings at the Site did not exhibit total BTEX concentrations in exceedance of the OCD *Remediation Action Levels*.

#### 3.0 CORRECTIVE ACTIONS

#### 3.1 Excavation and Treatment Activities

Corrective actions for the Site were approved by the OCD on July 13, 2010 in accordance with the Corrective Action Work Plan (CAWP) issued on July 6, 2010. Corrective actions were initiated at the Site on October 25, 2010. As part of the approved scope of work, excavation activities were conducted in vicinity of the former on-site tank battery. Excavation activities continued horizontally and vertically with final dimensions of up to 60 feet long by 25 feet wide and depths ranging from 12 to 15 feet deep. Approximately 500 in-place cubic yards (cy) of petroleum hydrocarbon impacted soil was excavated from the Site. SWG directed the over excavation of 50 cy of soil on January 31, 2011 and an additional 50 cy of soil on February 24, 2011 from various portions of the excavation sidewalls exhibiting the highest degree of petroleum hydrocarbons impact for an approximate total of 600 cubic yards of excavated soil. The excavation activities were performed by Lighthouse Environmental Services (Lighthouse) and James Hamilton Construction. The approximate limits of the excavation are depicted on Figure 3 of Appendix A.

The Site was approved by the OCD for use as a small landfarm, in accordance with the CAWP, to remediate soils excavated at the Site with COC concentrations in exceedance of the OCD *Remediation Action Levels*. Two (2) landfarm treatment cells were constructed on the far northwestern and southwestern portions of the Site utilizing unaffected soils to construct containment berms to prevent stormwater runon and stormwater runoff. The excavated soils were placed in the treatment



cells and spread and tilled/raked into an approximate 12-inch lift. Subsequent to tilling/raking of the soil, the soils were treated utilizing the direct application of a bioremediation agent (Remedy<sup>®</sup>). Remedy introduces nonpathogenic bacterial strains designed to enhance natural attenuation of the petroleum hydrocarbons, stimulate naturally occurring bacteria in the on-site soils, and introduce additional nonpathogenic bacterial strains designed to metabolize petroleum hydrocarbons. The bioremediation agent/water mixture was topically applied to the affected media utilizing a trailer mounted tank and motorized water pump. The soils within the treatment cells were retreated with non-potable water, Remedy<sup>®</sup> agent, and/or re-tilled/raked to enhance the rate and thoroughness of petroleum hydrocarbon degradation on October 27, 2010, February 24, 2011, April 27, 2011, May 24, 2011 and July 27, 2011. The approximate footprints of the landfarm treatment cells are depicted on Figure 3 of Appendix A. Photographic documentation of field excavation, backfill, and treatment activities are available in Appendix B.

#### 3.2 Confirmation Soil Sampling

Upon completion of the initial excavation activities, five (5) initial confirmation soil samples were collected from the excavation sidewalls and floor on October 27. 2010 and submitted for TPH GRO/DRO and BTEX analysis. Based on the laboratory analytical results, SWG directed the over excavation of soils from the excavation sidewalls and floor exhibiting the highest degree of petroleum hydrocarbon impact. Five (5) additional confirmation soil samples (EC-1, EC-2, EC-3, EC-4, and EC-5) were collected from the excavation sidewalls and floor on January 31, 2011 and submitted for TPH GRO/DRO and BTEX analysis. The additional confirmation soil samples EC-1, EC-2, EC-3, EC-4, and EC-5 were collected from the north, east, south, and west excavation sidewalls and the excavation floor, respectively. Based on the laboratory analytical results from the additional confirmation soil samples, SWG directed the over excavation of the north, east, and south, excavation sidewalls which exhibited the greatest degree of petroleum hydrocarbon impact. Four (4) supplementary confirmation soil samples (EC-1(R), EC-2(R), EC-3(R)A, and EC-3(R)B) were collected from the north, east, southeast, and southwest excavation sidewalls, respectively, on February 24, 2011 and submitted for TPH GRO/DRO and BTEX analysis. The supplementary confirmation soil samples EC-1(R), EC-2(R), EC-3(R)A, and EC-3(R)B were collected from the north, east, southeast, and southwest portions of the excavation sidewalls, respectively.

Following the proposed aeration and attenuation schedule, twenty (20) confirmation soil samples (TS-1 through TS-20) were collected from the treated soils on March 24, 2011 and submitted for TPH GRO/DRO, BTEX, and chlorides analysis. The soil samples were collected from locations within the treatment cell at evenly spaced intervals. Areas within the landfarm treatment cell which exhibited TPH GRO/DRO or chlorides concentration in exceedance of the NMAC *Small Landfarm Closure Performance Standards* were resampled on June 20, 2011, August 24, 2011, November 3, 2011, and/or December 6, 2011.

A site map indicating the location of the excavation confirmation soil samples as well as the landfarm treatment cell confirmation soil samples is included as Figure 3 in Appendix A. The laboratory analytical results from the excavation confirmation soil samples collected in January and February 2011 are summarized in Table 1 of Appendix D. Table 1 does not include the laboratory analytical results for the initial excavation confirmation soil samples, collected in October of 2011, as a result of over excavation activities required for each respective area. The laboratory analytical results from the treated soils confirmation soil samples are summarized in Table 2 of Appendix D. Corrective Action Report – Enterprise S. Carlsbad Compressor Station Carlsbad, Eddy County, New Mexico May 1, 2012



#### 3.3 Laboratory Analytical Methods

The soil samples collected from the excavation and landfarm treatment cell were analyzed for TPH GRO/DRO utilizing SW-846 #8015M, BTEX utilizing EPA method SW-846 #8021B, and chlorides utilizing EPA method 300.0. The analytical results for the soil sampling activities completed at the Site are summarized in the tables included in Appendix D. The executed chain-of-custody form and laboratory data sheets are provided in Appendix E.

Sampling equipment was cleaned using an Alconox<sup>®</sup> wash and potable water rinse prior to the beginning of the project and before the collection of each sample. Soil samples were collected and placed in laboratory prepared glassware, sealed with custody tape and placed on ice in a cooler, which was secured with a custody seal. The sample coolers and completed chain-of-custody forms were relinquished to ERMI's analytical laboratory in Allen, Texas or Hall Environmental Analytical Laboratory (HEAL) in Albuquerque, New Mexico.

ERMI and HEAL performed the analyses of samples under an adequate and documented quality assurance program to meet the project and data quality objectives. The laboratory's quality assurance program is generally consistent with the quality standards outlined in the National Environmental Laboratory Accreditation Program, as amended. In addition, the data generated by ERMI and HEAL meet the intralaboratory performance standards for the selected analytical method and the performance standards are sufficient to meet the bias, precision, sensitivity, representativeness, comparability, and completeness, as specified in the project data quality objectives.

#### 3.4 Data Evaluation

The Site is subject to regulatory oversight by the New Mexico EMNRD OCD. To address activities related to condensate releases, the OCD utilizes the *Guidelines for Remediation of Leaks, Spills and Releases* as guidance, in addition to the OCD rules, specifically NMAC 19.15.30 Remediation. These guidance documents establish investigation and remedial action requirements for sites subject to reporting and/or corrective action.

The Site was approved for use as a small landfarm to remediate soils with identified COC concentrations in exceedance of the OCD *Remediation Action Levels* in accordance with the CAWP prepared for the Site and approved by the OCD on July 13, 2010. The small landfarm operations were approved under the rules provided in NMAC 19.15.36 and comparison of treated soils to the NMAC *Small Landfarm Closure Performance Standards*.

#### 3.4.1 Tier 1 Evaluation

SWG compared the TPH GRO/DRO, benzene, and total BTEX concentrations or SRLs or practical quantitation limits (PQLs) associated with the confirmation soil samples collected from the excavation sidewalls and floor to the OCD *Remediation Action Levels*. It should be noted that the excavation confirmation soil samples were not analyzed for chlorides based on the absence of requirements under the OCD *Guidelines for Remediation of Leaks, Spills, and Releases* document. SWG compared the TPH GRO/DRO, benzene, total BTEX, and chlorides concentrations or

Corrective Action Report – Enterprise S. Carlsbad Compressor Station Carlsbad, Eddy County, New Mexico May 1, 2012



PQLs associated with the landfarm confirmation soil samples to the NMAC *Small Landfarm Closure Performance Standards*.

#### Total Petroleum Hydrocarbons

The excavation confirmation soil samples collected from the final extents of the north, east, and southeast portion of the excavation sidewalls (i.e.: EC-1(R), EC-2(R), and EC-3(R)A, respectively) exhibited TPH GRO/DRO concentrations ranging from 1,155 mg/Kg to 2,885 mg/Kg, which exceeds the OCD *Remediation Action Level* of 1,000 mg/Kg. The excavation confirmation soil samples collected from the final extents of the southwest and west portion of the excavation sidewalls and the excavation floor (i.e.: EC-3(R)B, EC-4, and EC-5, respectively) exhibited TPH GRO/DRO concentrations ranging from 15.45 mg/Kg to 692.84 mg/Kg, which do not exceed the OCD *Remediation Action Level* of 1,000 mg/Kg.

The most recent landfarm confirmation soil samples collected from each sampling area for TPH GRO/DRO analysis (i.e.: TS-1(R3), TS-2(R2), TS-3(R4), TS-4(R2), TS-5(R), TS-6(R), TS-7(R), TS-8(R), TS-9(R), TS-10(R), TS-11(R2), TS-12(R), TS-13(R), TS-15(R), TS-16(R), TS-17(R), TS-18(R), and TS-19(R2), TS-20(R)] exhibited TPH GRO/DRO concentrations ranging from below the laboratory PQLs to 486 mg/Kg, which is below the NMAC *Small Landfarm Closure Performance Standards* of 500 mg/Kg. Confirmation soil sample TS-14(R) exhibited a TPH DRO of 500 mg/Kg; a TPH GRO concentration was not reported above the laboratory PQL, which was 15 mg/Kg. Based on the absence of a "j" flag for the sample data, a TPH GRO concentration is not likely present. Therefore, the soil confirmation sample TS-14(R) is not considered to exhibit TPH GRO/DRO concentrations in exceedance of the NMAC *Small Landfarm Closure Performance* 500 mg/Kg.

The results of the soil sample analyses of TPH GRO/DRO for confirmation soil samples collected from the excavation or landfarm treatment cells are summarized in Table 1 and Table 2 of Appendix D.

#### <u>Benzene</u>

The excavation confirmation soil samples collected from the final extents of the excavation sidewalls and floor (i.e.: EC-1(R), EC-2(R), EC-3(R)A, EC-3(R)B, EC-4, and EC-5) did not exhibit benzene concentrations in exceedance of the laboratory PQLs, which are below the OCD *Remediation Action Level* of 10 mg/Kg.

The most recent landfarm confirmation soil samples collected from each sampling area for benzene analysis (i.e.: TS-1, TS-2, TS-3, TS-4, TS-5, TS-7, TS-8, TS-9, TS-10, TS-11, TS-12, TS-14, TS-15, TS-16, TS-17, TS-18, TS-19, TS-20] did not exhibit benzene concentrations in exceedance of the laboratory PQLs, which are below the NMAC *Small Landfarm Closure Performance Standards* of 0.2 mg/Kg. The landfarm confirmation soil sample TS-13(R) did not exhibit benzene concentration in exceedance of the laboratory PQLs, which was 0.24 mg/Kg. Based on the absence of a "j" flag for the sample data, a benzene concentration is not likely present. Therefore, the landfarm confirmation soil sample TS-13(R) is not considered to exhibit a benzene concentration in exceedance of the NMAC *Small Landfarm Closure Performation* soil sample TS-13(R) is not considered to exhibit a benzene concentration in exceedance of the NMAC *Small Landfarm Closure Performance Standard* of 0.2 mg/Kg.

The results of the soil sample analyses of BTEX for confirmation soil samples collected from the excavation or landfarm treatment cells are summarized in Table 1 and Table 2 of Appendix D.



#### Total BTEX

The excavation confirmation soil samples collected from the final extent of the northern excavation wall (EC-1(R)) exhibited a total BTEX concentration of 65.8323 mg/Kg, which exceeds the OCD *Remediation Action Level* of 50 mg/Kg. The excavation confirmation soil samples collected from the final extents of the east, southeast, southwest, and west excavation wall and the excavation floor (i.e.: EC-2(R), EC-3(R)A, EC-3(R)B, EC-4, and EC-5, respectively) exhibited total BTEX concentrations ranging from below the laboratory PQLs to 34.2287 mg/Kg, which are below the OCD *Remediation Action Level* of 50 mg/Kg.

The most recent landfarm confirmation soil samples collected from each sampling area for BTEX analysis (i.e.: TS-1, TS-2, TS-3, TS-4, TS-5, TS-6(R), TS-7, TS-8, TS-9, TS-10, TS-11, TS-12, TS-13(R), TS-14, TS-15, TS-16, TS-17, TS-18, TS-19, TS-20] exhibited total BTEX concentrations ranging from below the laboratory PQLs to 2.68 mg/Kg, which are below the NMAC *Small Landfarm Closure Performance Standards* of 50 mg/Kg.

The results of the soil sample analyses of total BTEX for confirmation soil samples collected from the excavation or landfarm treatment cells are summarized in Table 1 and Table 2 of Appendix D.

#### Chlorides

The most recent landfarm confirmation soil samples collected from each sampling area for chlorides analysis (i.e.: TS-1(R3), TS-2, TS-3(R3), TS-4, TS-5, TS-6, TS-7, TS-8, TS-9, TS-10, TS-11, TS-12, TS-13, TS-14, TS-15, TS-16, TS-17, TS-18, TS-19, TS-20) exhibited chlorides concentrations ranging from 110 mg/Kg to 440 mg/kg, which are below the NMAC *Small Landfarm Closure Performance Standards* of 500 mg/Kg.

The results of the soil sample analyses of chlorides for confirmation soil samples collected from the landfarm treatment cells are summarized in Table 2 of Appendix D.

#### 3.4.2 Tier 2 Evaluation

SWG resubmitted excavation confirmation soil samples EC-1(R) and EC-2(R) for TPH speciation utilizing TCEQ method TX1006. To further evaluate the identified TPH concentrations at the Site, SWG utilized the published American Petroleum Institute (API) Spreadsheet for Calculating Risk-Based Screening Levels (RBSL) and the inverse weighted average (TPH Mass Fractions of aliphatic and aromatic hydrocarbons) to establish a Site Specific RBSL for the complete TPH mixture (i.e., the whole product). The calculated TPH RBSL derived from excavation confirmation soil samples EC-1(R) and EC-2(R) are 5,000 mg/Kg and 5,300 mg/Kg, respectively. To be more conservative, SWG utilized 5,000 mg/Kg as the API Calculated Site-Specific TPH RBSL for Residential Soils on-site.

Excavation confirmation soil samples EC-1(R), EC-2(R), and EC-3(R)A exhibited TPH GRO/DRO concentrations ranging from 1,155 mg/Kg to 2,885 mg/Kg, which exceed the OCD *Remediation Action Level* of 1,000 mg/Kg. However, these excavation confirmation samples did not exhibit TPH GRO/DRO concentrations in exceedance of the API Site-Specific TPH RBSLs for Residential Soils on-site of 5,000 mg/Kg.

The soil samples collected from soil borings B-3 (6-7), B-5 (4-5), B-6 (7-8), B-7 (5-6), and B-8 (4-5) exhibited TPH GRO/DRO concentrations ranging from 2,440 mg/kg to



6,900 mg/Kg, which exceed the OCD Remediation Action Levels of 1,000 mg/Kg. However, soil samples B-5 (4-5), B-6 (7-8), B-7 (5-6), and B-8 (4-5) exhibited TPH GRO/DRO concentrations ranging from 2,440 mg/Kg to 4,140 mg/Kg, which are below the API Site-Specific TPH RBSLs for Residential Soils on-site of 5,000 mg/Kg. The soil sample collected from soil boring B-3 (6-7) exhibited a TPH GRO/DRO concentration of 6,900 mg/Kg, which also exceeds the EPA API Site-Specific TPH RBSLs for Soil on-site of 5,000 mg/Kg.

The laboratory analytical results of the excavation and landfarm confirmation soil samples collected from the Site are summarized in Table 1 and Table 2 of Appendix D.

#### 3.5 Closure Activities

On April 27, 2011, the excavation was backfilled with approximately 600 cubic yards of imported soils. Excavation backfill activities were performed by Lighthouse Environmental.

Approximately 600 cy of treated soil remained in the on-site landfarm treatment cell subsequent to backfill activities. Soil confirmation sampling was conducted at twenty (20) sampling points within the landfarm treatment cell. The landfarm confirmation soil samples and/or resamples were collected from sampling points TS-1 through TS-20 and submitted for TPH GRO/DRO, BTEX, and chlorides analysis. Based on the laboratory analytical results, the most recent confirmation soil samples collected from each landfarm sampling point did not exhibit TPH GRO/DRO, benzene, total BTEX, and/or chlorides concentrations in exceedance of the NMAC *Small Landfarm Closure Performance Standards*.

On March 22, 2012, the landfarmed soils, approximately 600 cy total, were stockpiled on the northwestern portion of the Site for future on-site or off-site use, as needed by Enterprise. The landfarm containment berms have been removed and the Site has been restored to its previous grade. Photographic documentation of closure activities is included in Appendix B.

SWG collected two (2) vadose zone soil samples VZ-1A and VZ-2A from the center of the former north and south landfarm treatment cells, respectively. The vadose zone soil samples were collected utilizing hand tools and on-site equipment from approximately 3 to 3.25 feet bgs. The vadose zone soil samples were submitted for TPH GRO/DRO, BTEX, and chlorides analysis. Based on the laboratory analytical results, vadose zone soil samples VZ-1 and VZ-2 did not exhibit TPH GRO/DRO, benzene, or total BTEX concentrations in exceedance of the NMAC Small Landfarm Closure Performance Standards. In addition, vadose zone sample VZ-1 did not exhibit chlorides concentration in exceedance of the NMAC Small Landfarm Closure Performance Standards. Vadose zone sample VZ-2 exhibited a chlorides concentration of 1,300 mg/Kg, which exceeds the NMAC Small Landfarm Closure However, the chlorides concentrations Performance Standards of 500 mg/Kg. observed in confirmation soil samples collected from 20 sampling locations within the landfarm treatment cells ranged from 100 mg/kg to 600 mg/kg. Therefore, the elevated chlorides concentration observed in vadose sample VZ-2 may be attributed to naturally occurring chlorides in the native soil at the Site. The laboratory analytical results from the vadose zone soil samples are summarized in Table 2 of Appendix D. The executed chain-of-custody form and laboratory data sheets are provided in Appendix E.



Soil samples collected from soil borings B-3 and B-6 and excavation confirmation soil sample EC-1(R) exhibited TPH GRO/DRO and/or total BTEX concentrations in exceedance of the OCD *Remediation Action Levels* and/or the API Site-Specific TPH RBSLs for Residential Soils on-site. These samples were collected in areas of the Site which include numerous aboveground and/or underground appurtenances related to natural gas streaming and/or processing operations; therefore, excavation of impacted media in the vicinity of these soil samples locations would not be feasible. It is believed that the corrective actions documented herein have addressed soils which were most heavily impacted as a result of historic leakage originating from the former on-site tank battery. A variance of alternative abatement requirements or standards may be requested from the OCD, in accordance with NMAC 19.15.30.9 based on the technical infeasible access of surface and subsurface soils in the vicinity of soil borings B-3 and B-6 and excavation confirmation soil sample EC-1(R).

#### 4.0 FINDINGS AND RECOMMENDATIONS

The Site formerly included a tank battery on the south/southwestern portion of the property which stored natural gas condensate or produced liquids. Field operations personnel identified stained soils indicative of historical leakage prior to and during the decommissioning of the former on-Site tank battery. Initial site investigation activities performed by SWG did not identify TPH GRO/DRO, benzene, or total BTEX concentration in exceedance of the OCD *Remediation Action Levels*.

Supplemental site investigation activities included the advancement of eight (8) additional soil borings to a refusal depth of 8 feet bgs in the area north, east, and south of the former tank battery. The lithology encountered during the advancement of the supplemental soil borings included a silty clay, clayey silt, or silty sand. SWG collected up to 2 soil samples from seven (7) of the eight (8) supplemental soil borings and submitted them for TPH GRO/DRO and BTEX analysis. Based on the laboratory analytical results, soil samples collected from the supplemental soil borings advanced to the northeast and east of the former tank battery (B-3 and B-6) exhibited total BTEX concentrations in exceedance of the OCD Remediation Action In addition, a soil sample collected from a supplemental soil boring Levels. advanced to east of the former tank battery (B-3) exhibited TPH GRO/DRO concentration in exceedance of the OCD Remediation Action Levels and the API Site-Specific TPH RBSLs for Residential Soils on-Site. The remaining soil samples collected from the supplemental soil borings did not exhibit benzene, total BTEX, or TPH GRO/DRO concentration in exceedance of the OCD Remediation Action Levels and/or the API Site-Specific TPH RBSLs for Residential Soils.

As part of the CAWP approved by the OCD, excavation activities were conducted in vicinity of the former storage tank battery. An approximate total of 600 in-place cy of petroleum hydrocarbon impacted soil was excavated from the Site. The excavations continued horizontally and vertically with final dimensions of approximately 60 feet long by 25 feet wide and depths ranging from 12 to 15 feet deep. During the excavation activities, SWG encountered silty clays, clayey silts, and silty sands to approximately 8 feet bgs followed by a weathered sandstone to the terminus depth of the excavation. Subsequent to the completion of excavation activities soil confirmation samples were collected from the final extents of each of the sidewalls and floor and submitted for TPH GRO/DRO and BTEX analysis. Based on the laboratory analytical results, the final excavation confirmation soil sample collected from the north excavation sidewall (EC-1(R)) exhibited total BTEX and TPH GRO/DRO concentrations in exceedance of the OCD *Remediation Action Levels*.



However, the final excavation confirmation soil sample collected from the north excavation sidewall did not exhibit TPH GRO/DRO concentration in exceedance of the API Site-Specific TPH RBSLs for Residential Soils. The remaining excavation confirmation soil samples did not exhibit benzene, total BTEX, or TPH GRO/DRO concentration in exceedance of the OCD *Remediation Action Levels* and/or the API Site-Specific TPH RBSLs for Residential Soils on-Site.

Subsequent to the completion of excavation activities, the excavation was backfilled using imported fill. The excavated soils were placed within two landfarm treatment cells constructed on the northwest and southwest portion of the Site. The soils were spread and tilled or raked to enhance aeration of petroleum hydrocarbon COCs. In addition, a bioremediation agent (Remedy) was applied which includes nonpathogenic bacterial strains which assist in degradation and metabolism of petroleum hydrocarbons. Subsequent to proposed aeration and attenuation schedules, confirmation soil samples were collected from 20 sampling points within the landfarm treatment cells and submitted for TPH GRO/DRO, BTEX, and chlorides analysis. Some of the sampling points within the landfarm treatment cell were resampled for one or more COCs. Based on the laboratory analytical results, the most recent confirmation soil samples collected from the landfarm treatment cell did not exhibit chlorides, benzene, total BTEX, and TPH GRO/DRO concentrations in exceedance of the NMAC *Small Landfarm Closure Performance Standards*.

The soils within and below the landfarm treatment cells were treated such that chlorides, benzene, total BTEX, and TPH GRO/DRO concentrations were below the NMAC *Small Landfarm Closure Performance Standards*. As a result, the treated soils were stockpiled on the northwest portion of the Site pending OCD approval for future on-site and/or off-site reuse. Vadose zone samples VZ-1 and VZA-2 were collected from below each landfarm treatment cell and did not exhibit chlorides, benzene, total BTEX, or TPH GRO/DRO, concentrations in exceedance of the NMAC *Small Landfarm Closure Performance Standards* with one exception. Vadose zone soil sample VZ-2 exhibited chlorides concentration in exceedance of the NMAC *Small Landfarm Closure Performance Standards*. However, based on the predominately low levels of chlorides concentration previously observed within the confirmation soil samples collected from the landfarm treatment cells, it is possible that the exceedance may be attributed to naturally occurring chlorides in the native soil at the Site.

Based on the results of the investigation and corrective action activities, it is believed that the source area has been delineated horizontally for petroleum hydrocarbon COCs with the exception of the area to the immediately north, northeast, and east of the former tank battery. Based on laboratory analytical results of the soil confirmation samples collected from the excavation floor, the soil samples collected from the initial soil boring, and the lithology encountered at the Site, it is believed that the source area has been vertically delineated. It is anticipated that the area of impact was primarily limited to the upper 8 or 9 feet of surface soils, based on the established presence of a sandstone formation encountered near this depth. Thus, it is believed that petroleum hydrocarbon COCs spread out vertically from the source area after encountering the sandstone unit.

It is believed that the corrective actions documented herein have addressed soils which were most heavily impacted as a result of historic leakage originating from the former on-site tank battery. In addition, it is believed that the affected soils remaining in this area are likely limited in extent to an area to the north/northwest/west of the former storage tank battery, which underlies the current processing area, with vertical migration inhibited by the presence of an impermeably



sandstone unit at a depth of approximately 10 feet bgs. Numerous aboveground and/or underground appurtenances related to natural gas streaming and/or processing operations exist within these areas. Thus, excavation activities in the vicinity of the affected soils remaining in place would not be feasible. It is believed the COCs remaining on-site to not pose significant risk to human health or the environment; therefore, a variance of alternative abatement requirements or standards may be requested from the OCD, in accordance with NMAC 19.15.30.9 based on the technical infeasible access of surface soils in the vicinity of soil borings B-3 and B-6 and excavation confirmation soil sample EC-1(R).

Based on the results of the corrective actions, it is recommended that the OCD be notified of the intent to close the small landfarm permit issued for the Site and request for authorization to reuse the treated soils, on or off-Site. In addition, a proposal should be prepared for the director of the OCD to petition for alternative abatement requirements or standards based on the technical infeasible access of surface and subsurface soils in the vicinity of soil borings B-3 and B-6 and excavation confirmation soil sample EC-1(R).



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APPENDIX A

## Figures









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### APPENDIX B

## Photographic Documentation

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2.) View from west portion of excavation, looking east.



3.) View of landfarm treatment cell on northern portion of Site, looking east.



5.) View of landfarm treatment activities on northern portion of Site, looking east.



4.) View of landfarm treatment cell on south portion of the Site, looking west.



6.) View of landfarm treatment activities on south portion of Site, looking west.





7.) View landfarm tilling/raking activities on southern portion of Site, looking east.



9.) View of excavation backfill activities, looking west.



8.) View landfarm treatment activities on north portion of Site, looking east.



10.) View of excavation backfill activities, looking west/northwest.



11.) View of area near soil borings B-3 and B-6, looking northwest.



12.) View of treated soils stockpiled on northwest portion of the Site.





APPENDIX C

Soil Borings Logs

In S. Calassion Ku, Calisbau, Mu         ject Manager:       B. Chris Mitchell, P.G.         DRILLING & SAMPLING INFORMATION         e Started:       November 5, 2009         e Completed:       November 5, 2009         e Completed:       November 5, 2009         ing Company:       Straub         Straub       Corporation         ler:       Marty Straub         ologist:       BCM         well D       Screer         e Hole Dia:       6-Inch         Screer       CB - Five Foot Core BARREL         < CONTINUOUS FLIGHT AUGERS       SS - DRIVEN SPLIT SPOON         < GEOPROBE       ST - PRESSED SHELBY TUBE         AIR ROTARY       SOIL CLASSIFICATION	Soil Boring Number: <u>B.1</u> Project #: <u>0210003</u> Drawn By: <u>JWM</u> Approved By: <u>BCM</u> m: <u>N/A</u> Size: <u>N/A</u> Length: <u>N/A</u> Length: <u>N/A</u> ROUNDWATER DEPTH MPLETION ELL STABILIZATION UNA Length: <u>N/A</u> ROUNDWATER DEPTH Mage difference of the state
SILTY SAND, Gray, Dry, Petroleum Hydrocarbon Odor SANDY SILT, Pale Brown, Dry, Petroleum Hydrocarbon C SILTY SAND, Brown, Dry, No Odor BOTTOM OF BORING	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$

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Project Location:Off S. Carassco Rd, Carlsbad. NM Project Manager:Joseph Martinez DRILLING & SAMPLING INFORMATION Date Started:2.25.2011 Date Completed:2.25.2011 Drilling Company:Earth Worx Driller:Louis Trujillo	Soil Boring Number: B-2 Project #: 0210003 Drawn By: JWM Approved By: BCM
Geologist:B. Chris MitchellWell Diam: Boring Method:Geoprobe Screen Size: Bore Hole Dia:GInch Screen Length BORING METHOD HSA-HOLLOW STEM AUGERS CFA - CONTINUOUS FLIGHT AUGERS CFA - CONTINUOUS FLIGHT AUGERS AR - AIR ROTARY SOIL CLASSIFICATION SURFACE ELEVATION: SURFACE ELEVATION:	N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A
Refusal @ 8"	
Note: This log is not to be used outside the original report.	Southwest

DRILLING & SAMPLING INFORMATION     Soll Borting Number: B.3.       Date Started:     2.25.2011     Project #:     0210003       Date Completed:     2.25.2011     Drawn By:     JWM       Driller:     Louis Trujillo     Geologist:     B. Chris Mitchell     Well Diam:     NA       Born Method:     Geoprobe     Screen Size:     NA     Soll Borting Number: B.3.       Born Method:     Geoprobe     Screen Size:     NA       Born Method:     Geoprobe     Screen Size:     NA       Born Method:     Soll Bort Properties     Screen Size:     NA       Born Method:     Soll Poor Core BARREL     Casing Length:     NA       PA: HOLLOW STEM AUGERS     CB - FIVE POOT CORE BARREL     GROUNDWATER DEPTH     A T COMPLETION       SURFACE ELEVATION:     ST - PRESED SHELBY TUBE     Y at WELL STABULZATION     SAMPLING NOTES       SURFACE ELEVATION:     SOIL CLASSIFICATION     Surface Streed Str		NG LOG	JRI	3C	E	L	Ol	S	-	terprise Products Operating, LLC _Carlsbad Compressor Station ff S. Carassco Rd, Carlsbad, NM Dseph Martinez	nt:E ect Name:S ect Location: ect Manager:	Client Projec Projec Projec
Date Stanted:       2.25.2011       Project #:       D2/0003         Date Completed:       2.25.2011       Drawn By::       DVM         Driller:       Louis Truillo       Casing Length::       N/A         Geologist:       B. Chris Mitchell       Well Diam::       N/A         Boring Method:       Geoptobe:       Screen Size::       N/A         Boring Method:       Geoptobe:       Screen Length::       N/A         Boring Method:       Casing Length::       N/A         Boring Method:       Casing Length::       N/A         GROUNDWATER DEPTH GROUNDWATER DEPTH Groundwater Depther       Well Stanul/Annon       Boring Method:         Group Compone:       St. PRESSED SHELBY TUBE       GROUNDWATER DEPTH Group Compone       Well Stanul/Annon         Mark AR ROTARY       SOIL CLASSIFICATION       Weil Stanul/Annon       Weil Stanul/Annon         SURFACE ELEVATION:       SOIL CLASSIFICATION       Weil Stanul/Annon       113         SURFACE ELEVATION:       Refusal @ 8'       Method:       10       113         Refusal @ 8'       Refusal @ 8'       Method:       10       10         In a       In a       In a       10       10         SURFACE ELEVATION:       Refusal @ 8'       In a			3	<u>B-3</u>	ber:	Num	Boring	Soil E		VILLING & SAMPLING INFORMATION	D	Data
Drilling Company:       Earth Worx       Approved By:       BCM         Driller:       LQuis Truillo       Geologist:       B. Chris Mitchell       Well Diam:       N/A         Boring Method:       Geoprobe       Screen Size:       N/A         Boring Method:       Geoprobe       Screen Length:       N/A         Casing Length:       N/A       Casing Length:       N/A         BORING METHOD       S. MPLER TYPE       GROUNDWATER DEPTH       GROUNDWATER DEPTH         CP:       GEOPROBE       Screen Length:       N/A         Screen Congth:       Screen Length:       N/A         Screen Congth:       Screen Length:       N/A         Screen So:       GROUNDWATER DEPTH       GrounDeptertion       GrounDeptertion         Screen Congth:       Screen Length:       N/A       GrounDeptertion       GrounDeptertion         Screen So:       GrounDeptertion       GrounDeptertion       GrounDeptertion       GrounDeptertion       GrounDeptertion         Screen So:       Gro			3	0003	0210 WM	<u>ر</u>	ct #:_ n Bv:	_ Proje Draw		2.25.2011	Completed:	Date : Date (
Driller:Louis Truitilo Geologist:B. Chris MitchellWell Diam:N/A Borning Method:GeoprobeScreen Size:N/A Borning Method:GeoprobeScreen Length:N/A BORING METHODSAMPLER TYPEGROUNDWATER DEPTH GROUNDWATER DEPTH GROUNDWATER DEPTH Q: AT COMPLETIONYAT COMPLETION				1	всм	By:I	oved	Appro		Earth Worx	ng Company:	Drillin
Geologist:       B. Chris Mitchell       Well Diam:       N/A         Soring Method:       Geoprobe       Screen Size:       N/A         BORING METHOD       SAMPLER TYPE       Casing Length:       N/A         BORING METHOD       SAMPLER TYPE       GROUNDWATER DEPTH       V       N/A         BORING METHOD       SAMPLER TYPE       GROUNDWATER DEPTH       V       N/A         CPA - CONTINUOUS PLICIT AUGUNS       SS - DRIVEN SPLIT SPOON       V       AT COMPLETION       V       N/A         OF - GEOPROBE       ST - PRESSED SHELBY TUBE       V AC COMPLETION       V				_				-		Quis_Trujillo	er:	Driller
Borning Method:       Geoprobe       Screen Size:       N/A         Borning Method:       Gench       Screen Lengih:       N/A         Borning Method:       Screen Lengih:       N/A         Cra- continuous placific Audgers       CB- IFVE FOOT CORE BARREL       GROUNDWATER DEPTH         Screen State:       N/A       GROUNDWATER DEPTH         Y at well stabilization       Y at well stabilization         SURFACE ELEVATION:       SOIL CLASSIFICATION         Surged       Georged         SURFACE ELEVATION:       Soil CLASSIFICATION         Surged       Georged         SURFACE ELEVATION:       Soil CLASSIFICATION         Surged       Georged         Surged       Gray, Dry, Petroleum Hydrocarbon       Soil Soil Soil Soil Soil Soil Soil Soil								N/A	_ Well Diam:	3. Chris Mitchell	ogist:	Geolo
BORING METHOD HOR DIA:       Casing Length:       NA         BORING METHOD HOR HOLDOW STEM AUGERS CRA - FIVE FOOT CORE BARREL CRA - CONTINUOUS FLIGHT AUGERS SS - DRIVEN SPLIT SPOON SS - DRIVEN SPLIT SPOON ST - PRESSED SHELBY TUBE       GROUNDWATER DEPTH AT COMPLETION S - DRIVEN SPLIT SPOON ST - PRESSED SHELBY TUBE       Image: Completion AT COMPLETION AT WELL STABILIZATION       Image: Completion Sole of Completion AT COMPLETION SAMPLING NOTES         SOIL CLASSIFICATION CLAYEY SILT with Sand, Gray, Dry, Petroleum Hydrocarbon Odor       Image: Completion Sole of Completion ST - PRESSED SHELBY TUBE       Image: Completion Sole of Completion SURFACE ELEVATION:       Image: Completion Sole of Completion So								N/A	_Screen Size:	Jeoprobe	ng Method:	Boring
SOIL CLASSIFICATION     understand       SURFACE ELEVATION:     understand       CLAYEY SILT with Sand, Gray, Dry, Petroleum Hydrocarbon     understand       Odor     113       Refusal @ 8'     10	3	BORING AND SAMPLING NOTES	ater Depth eadings (ppm)	. A	nerval	тн	DEP	N/A WATER	Casing Length: Casing Length: GROUND ⊈ AT COMPLET ⊈ AT WELL ST/	SAMPLER TYPE SERS CB - FIVE FOOT CORE BARREL HT AUGERS SS - DRIVEN SPLIT SPOON ST - PRESSED SHELBY TUBE	ORING METHOD - HOLLOW STEM AU - CONTINUOUS FLIC GEOPROBE AIR ROTARY	BO HSA - I CFA - I GP - G AR - A
CLAYEY SILT with Sand, Gray, Dry, Petroleum Hydrocarbon       113         Odor       196         5       219         146       227         187       287         10       106         10       10		·	Groundw FID/PID R	% Recove	Sample Ir	Sample No.	Depth Scale	Stratum Depth		SOIL CLASSIFICATION	SURFACE EL	Percell
			113 196 219 146 227 187 287 106						drocarbon	with Sand, Gray, Dry, Petroleum Hy Refusal @ 8'	CLAYEY SIL Odor	
Note: This log is not to be used outside the original report.	:	Couthwest	 >			1			ort.	is not to be used outside the original repo	Note: This log	

Ceclogs::::::::::::::::::::::::::::::::::::	Client:       Enterprise Products Operating, LLC         Project Name:       S. Carlsbad Compressor Station         Project Location:       Off S. Carassco Rd, Carlsbad, NM         Project Manager:       Joseph Martinez         DRILLING & SAMPLING INFORMATION         Date Started:       2.25.2011         Date Completed:       2.25.2011         Drilling Company:       Earth Worx         Driller:       Louis Trujillo	Soil Boring Number: <u>B-4</u> Project #: <u>0210003</u> Drawn By: <u>JWM</u> Approved By: <u>BCM</u>
CLAYEY SILT with Sand, Gray, Dry, Petroleum Hydrocarbon Odor Refusal @ 8' Refusal @ 8' 10	Geologist:       B. Chris Mitchell       Well Diam:         Boring Method:       Geoprobe       Screen Size:         Bore Hole Dia:       6-Inch       Screen Length:         BORING METHOD       SAMPLER TYPE       CB - FIVE FOOT CORE BARREL       GROUND         FISA - HOLLOW STEM AUGERS       CB - FIVE FOOT CORE BARREL       GROUND         GP - GEOPROBE       SS - DRIVEN SPLIT SPOON       T COMPLET         AR - AIR ROTARY       SOIL CLASSIFICATION       X AT WELL ST	N/A N/A N/A N/A WATER DEPTH TON ABILIZATION We write DEPth TON ABILIZATION LEDUED Readings (pbut BORING AND SAMPLING NOTES
	CLAYEY SILT with Sand. Gray, Dry, Petroleum Hydrocarbon Odor Refusal @ 8'	

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1       SOLL CLASSIFICATION       1       1       0       1         SURFACE ELEVATION:       1       1       0       0       0       0         CLASSIFICATION:       1       1       0       0       0       0       0         CLASSIFICATION:       1       1       0	Client:      Enterprise Products Operating, LLC         Project Name:      S. Carlsbad Compressor Station         Project Location:       Off S. Carassco Rd, Carlsbad, NM         Project Manager:       Joseph Martinez         DRILLING & SAMPLING INFORMATION         Date Started:       2.25.2011         Date Completed:       2.25.2011         Driller       Louis Trujillo         Geologist:       B. Chris.Mitchell         Boring Method:       Geoprobe         SAMPLER TYPE       GROUND         Gr- acontinuous FLIGHT AUGERS       St - PRESSED SHELBY TUBE         Gr - GEOPROBE       St - PRESSED SHELBY TUBE         AT COMPLET       AT WELL ST.	Soil Boring Number: B-5 Project #: 0210003 Drawn By: JWM Approved By: BCM N/A N/A N/A N/A N/A N/A N/A N/A
	SURFACE ELEVATION: SURFACE ELEVATION: CLAYEY SILT with Sand, Tan and Gray, Dry, Petroleum Hydrocarbon Odor Refusal @ 8'	

Client:Enterprise Products Operating, LLC Project Name:S. Carlsbad Compressor Station Project Location:Off S. Carassco Rd. Carlsbad. NM Project Manager:Joseph Martinez DRILLING & SAMPLING INFORMATION Date Started:2.25.2011		Soil B Project	OII oring N ct #:	E	З( :в 000	-6 3	RJ	ING LOG
Date Completed:2.25.2011 Drilling Company:Earth Worx		Drawı Appro	n By: ived By	_JWM /:BCl	ц м			
Driller:Louis Trujillo	Well Diam:	N/A		r			_	
Boring Method: <u>Geoprobe</u> Bore Hole Dia: <u>6-Inch</u>	Screen Size: Screen Length:	N/A N/A N/A						
BORING METHOD HSA - HOLLOW STEM AUGERS CFA - CONTINUOUS FLIGHT AUGERS GP - GEOPROBE AR - AIR ROTARY BORING METHOD CB - FIVE FOOT CORE BARREL SS - DRIVEN SPLIT SPOON ST - PRESSED SHELBY TUBE	GROUND ⊈ AT COMPLET ⊈ AT WELL ST/		DEPTH ION	Interval	iery	water Depth	Readings (ppm)	BORING AND SAMPLING NOTES
SOIL CLASSIFICATION SURFACE ELEVATION:		Stratum Depth	Depth Scale Semole	Sample	% Recov	Ground	FID/PID	
SILTY CLAY, Dark Brown, Dry, No Odor				Τ			0	
CLAYEY SILT with Sand, Gray, Dry, Petroleum Hyd Odor	drocarbon		5	V - 5' T - 8'			44 82 140 100 119 67	
Note: This log is not to be used outside the original repo	r1.							
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Client: Enterprise Products Operating. LLC Project Name: S. Carlsbad Compressor Station	SOIL BORING LOG
Project Location: Off S. Carassco Rd. Carlsbad. NM	SOL DOMINO LOO
Project Manager: Joseph Martinez	
DRILLING & SAMPLING INFORMATION	Soil Boring Number:_ <u>B-7</u> Project #: 0210003
Date Completed: 2.25.2011	Drawn By:JWM
Drilling Company: Earth Worx	Approved By: BCM
Driller:Louis Trujillo	
Geologist: B. Chris Mitchell Well Dia	9m: N/A
Boring Method: <u>Geoprobe</u> Screen	Size: N/A
Bore Hole Dia:Screen	Length:N/A
BORING METHOD SAMPLER TYPE HSA - HOLLOW STEM AUGERS CFA - CONTINUOUS FLIGHT AUGERS GP - GEOPROBE AR - AIR ROTARY	Length:     N/A       ROUNDWATER DEPTH     Image: Completion       OMPLETION     Image: Completion       Tell STABILIZATION     Image: Completion
SOIL CLASSIFICATION SURFACE ELEVATION:	Prepth Scale Crown
CLAYEY SILT with Sand, Tan and Gray, Dry, No Odor to Petroleum Hydrocarbon Odor	
Note: This log is not to be used outside the original report.	<b></b> Couthwest
	✓ GEOSCIENCE

Project NameGIS_Catashad Compression Station	Client: Enterprise Products Operating. LLC	
Project LocationOES, 2 Canasso Rel Calabadi. NM	Project Name:S. Carlsbad Compressor Station	SOIL BORING LOG
Project ManagerSAMPLING ASMPLING INFORMATION Soll Boing NumberB.9. Dites Standt 225.20.1 Drawn By NMM Drawn Completed 225.20.1 Drawn By NMM Drawn Completed 225.20.1 Creating NumberB.4. Drawn Completed 225.20.1 Drawn By NMM Drawn By NMM Drawn By Law Michael Secon Size NA Drawn By NMM Creating Law Michael Secon Size NA Drawn By NMM Creating Law Michael Secon Size NA Drawn By NMM Creating Law Michael Secon Size NA Creating Largenty N. No. Creating Law Michael Secon Size NA Creating Largenty N. No. Creating Law Michael NA Creating Largenty N. No Creating Largenty N. No. Creating Law Michael NA No. Creating Largenty N. No N	Project Location: Off S. Carassco Rd. Carlsbad, NM	SUL DUNING LUG
DRULLINO & SAMPLING INFORMATION     Solil Boring NumberE84       Date Started225_201	Project Manager: Joseph Martinez	
Date Started:       2.25.2011       Project #::::::::::::::::::::::::::::::::::::	DRILLING & SAMPLING INFORMATION	Soil Boring Number:_ <u>B-8</u>
Date CompletedSatu	Date Started: 2.25.20[1	Project #: <u>0210003</u>
Delling Company_Earth Work	Date Completed: 2.25.2011	Drawn By:JWM
Driller: Louis Traillo Coologist: B. Chris Michael Well Diam: NA Born Hole Die: Genetal Screen Length: NA Born Hole Die: Genetal Screen Length: NA Casing Le	Drilling Company: Earth Worx	Approved By: <u>BCM</u>
Ceclogist:       B. Chis Michell       Well Diam       NA         Born Method       Geograde       Screen Izer, KNA       Screen Izer, KNA         BORN METHOD       Casing Length:       NA       Casing Length:       NA         BORN METHOD       SAMPLER TYPE       Casing Length:       NA       BORNM STALORS       SAMPLER TYPE         Control C	Driller:Louis Trujillo	
Born Mol Dok	Geologist: B. Chris Mitchell We	/  Diam:N/A
Bore Hole DiaGlipchSAMPLER TYPE Compared Report Statements Compared Report Statements Compared Report Statements Compared Report Statements Statements SUMPLING NOTES SUMPLING NOTES SUMPLI	Boring Method: Geoprobe Sc	een Size:N/A
DORNOG METHOD (The Contractors in Audens) (The Contractors in Audens)	Bore Hole Dia: 6-Inch Sc	een Length: <u>N/A</u>
ISS - PIOLEDW STEM AUGUERS CP- CONTINUES BLOFT AUGUERS CP- CONTINUES BLOFT AUGUERS SS - PIOLEDW STUT SPOON SS - PIOLEDW STUT SPOON SULTY CLASSIFICATION SULTY CLAY, Gray, Dry, Petroleum, Hydrocarbon Odor SILTY CLAY, Gray, Dry, Petroleum, Hydrocarbon Odor SILTY SAND, Tan, Dry, No Odor Refusal @ 8' 10	Ca BORING METHOD SAMPLER TYPE	Sing Length: <u>N/A</u>
Difference     Shuff Linko Rolles     Shuff Linko Rolles       Minum Rollar     Soll CLASSIFICATION     Image: Standard Linko Rolles       SURFACE ELEVATION:     Image: Standard Linko Rolles       SILTY CLAY, Gray, Dry, Petroleum, Hydrocarbon Odor     Image: Standard Linko Rolles       SILTY SAND, Tan, Dry, No Odor     Image: Standard Linko Rolles       Refusal @ 8'     Image: Standard Linko Rolles	HSA - HOLLOW STEM AUGERS CB - FIVE FOOT CORE BARREL	
MULTINE MOTARY     SOIL CLASSIFICATION     Image: Classification of the second	GP - GEOPROBE ST - PRESSED SHELBY TUBE	AT WELL STABILIZATION
Soll CLASSIFICATION       understand       and the second	AR - AIR ROTARY	
121       SURFACE ELEVATION:       5.2       1.20       1.20       1.21       1.21         CLAYEY SILT with Sand, Tan, Dry, No Odor       SILTY CLAY, Gray, Dry, Petroleum, Hydrocarbon Odor       1.11       0       0       0         SILTY CLAY, Gray, Dry, No Odor       III       IIII       0       0       0       0         SILTY SAND, Tan, Dry, No Odor       IIII       IIIIII       IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII		
CLAYEY SILT With Sand, Tan, Dry, No Odor SILTY CLAY, Gray, Dry, Peiroleum, Hydrocarbon Odor SILTY SAND, Tan, Dry, No Odor Refusal @ 8' 10 - 10 -		PID Der
SILTY CLAY, Gray, Dry, Petroleum, Hydrocarbon Odor       0         SILTY SAND, Tan, Dry, No Odor       0         Refusal @ 8'       7.0         10       10         -       -         - <t< td=""><td>CLAYEY SILT with Sand, Tan, Dry, No Odor</td><td></td></t<>	CLAYEY SILT with Sand, Tan, Dry, No Odor	
SILTY CLAY, Gray, Dry, Petroleum, Hydrocarbon Odor SILTY SAND, Tan, Dry, No Odor Refusal @ 8'	4 11	
SiL TY CLAY, Gray, Dry, Petroleum, Hydrocarbon Odor SIL TY SAND, Tan, Dry, No Odor Refusal @ 8' 10 - 11 - 12 - 13 - 14 - 15 - 16 - 16 - 17 - 18 - 19 - 19 - 10		
SILTY SAND, Tan, Dry, No Odor       Image: Constraint of the second	SILTY CLAY, Gray, Dry, Petroleum, Hydrocarbon Odd	
SILTY SAND, Tan, Dry, No Odor       0         Refusal @ 8'       10         10       1         11       1         12       1         13       1         14       1         15       1         16       1         17       1         18       1         19       1         10       1         11       1         12       1         13       1         14       1         15       1         16       1         17       1         18       1         19       1         10       1         10       1         11       1         12       1         13       1         14       1         15       1         16       1         17       1         18       1         19       1         19       1         19       1         19       1      10	4 11	
Refusal @ 8'	SILTY SAND, Tan, Dry, No Odor	
Refusal @ 8'		
	Refusal @ 8'	
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Note: This log is not to be used outside the original report	Note: This log is not to be used outside the original report	
		Couthwest
JGEOSCIENCE		JGEOSCIENCE

ient:Enterprise Products Operating_LLC	
oject Name: S. Carlsbad Compressor Station	SOIL BORING LOG
oject Location: Off S. Carassco Rd. Carlsbad, NM	SOIL DOMING LOO
oject Manager: Joseph Martinez	
DRILLING & SAMPLING INFORMATION	Soil Boring Number: <u>B-9</u>
ate Started: 2.25.2011	Project #:0210003
ate Completed: 2.25.2011	Drawn By: <u>JWM</u>
illing Company: <u>Earth Worx</u>	Approved By: <u>BCM</u>
iller:Louis_Trujillo	
eologist: B. Chris Mitchell Well Diam:	<u>N/A</u>
Dring Method: <u>Geoprobe</u> Screen Size:	
Screen Lengt	
BORING METHOD         SAMPLER TYPE         Cashing Length           SA + HOLLOW STEM AUGERS         CB - FIVE FOOT CORE BARREL         GROUN           FA - CONTINUOUS FLIGHT AUGERS         SS - DRIVEN SPLIT SPOON         ♀         ♀         AT COMPLE           P - GEOPROBE         ST - PRESSED SHEI BY TUBE         ♥ AT WELL S          ▼         AT WELL S	DWATER DEPTH ETION TABLIZATION
R-AIR ROTARY	
SOIL CLASSIFICATION	
SUBFACE ELEVATION:	
CLAYEY SILT with Sand, Tan, Dry, No Odor SANDY SILT, Tan, Dry, No Odor Refusal @ 8'	
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Note: This log is not to be used outside the original report.	Southwest

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APPENDIX D

### Tables

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		SOIL AN:	LYTICAL RESULTS -	SOIL BORINC	and EXCAV	VTION CONFI	RMATION SAM	APLES		
Sample I.D.	Date	Sample Depth (feet)	Chlorides (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)
New Mexico Depa	o Energy, Minerals riment, Oli Conser Remediation Act	A Natural Resources vation Division, on Level	NE	10	NE	NE	NE	50		00
Risk Base	API Site-Specif d Screening Level	ic TPH for Residential Solls	NE	NE	NE	, NE	NE	50	5. 5.	00
B-1 (7-8)	11/5/2009	7 10 8	NA	0.34	7.1	1.5	31	39.94	270	710
B-1 (19-20)	11/5/2009	19 to 20	NA	<0.0021	<0.0022	<0.0024	0.036	0.036	0.15	24
B-2	2/25/2011				Soil Sample	s Not Collecte	d 			
B-3 (6-7)	2/25/2011	6 to 7	NA	0.0091	56.8	13.1	224	293.9091	2,070	4,830
B-4 (3-4)	2/25/2011	3 to 4	NA	<0.00131	<0.00131	<0.00131	<0.00394	<0.00787	<0.0657	4.17
B-4 (5-6)	2/25/2011	5 to 6	NA	<0.00133	0.00316	<0.00133	0.0198	0.02562	3.75	368
B-5 (4-5)	2/25/2011	4 to 5	NA	<0.00125	7.62	0.00991	29.4	37.03116	1,540	2,520
B-6 (4-5)	2/25/2011	4 to 5	NA	<0.00122	0.00847	<0.00122	0.0147	0.02561	1.12	25.5
B-6 (7-8)	2/25/2011	7 to 8	NA	<0.00128	7.17	4.15	46.3	57.62128	1,930	2,210
B-7 (2-3)	2/25/2011	2 to 3	NA	<0.00122	<0.00122	<0.00122	<0.00366	0.00732	<0.0612	7.98
B-7 (5-6)	2/25/2011	5 to 6	NA	<0.0012	2.23	2.28	10.5	15.0112	960	1,480
B-8 (4-5)	2/25/2011	4 10 5	NA	<0.00135	6.93	2.93	17.8	27.66135	2,100	1,920
B-8 (7-8)	2/25/2011	7 10 8	NA	<0.00119	<0.00119	<0.00119	<0.00358	<0.00715	<0.0597	199
B-9 (4-5)	2/25/2011	4 10 5	NA	<0.0012	0.00416	<0.0012	<0.00359	<0.01015	<0.0598	4.5
B-9 (7-8)	2/25/2011	7 10 8	NA	<0.00186	<0.00186	<0.00186	<0.00558	<0.01116	<0.0929	8.98
SEC-1	1/31/2011	8 10 9	NA State	् <0.0125	13	9.23	103	125:2425	903	6.040
EC-1(R)	2/24/2011	8 10 9	NA	<0.0123	13.1	2.62	50.1	65.8323	569	1,250
EC-2	1/31/2011	8 to 9	NA.	<0.0061.1	0.214	0.240	16.8	17.26011	I.34	4,530
EC-2(R)	2/24/2011	8,10,9	NA	<sup>77</sup> <0.0127	7.98	0.836	25.4	34.2287	6,980	674
EC-2(R)*	2/24/2011	8 10 9	NA	NA	NA	NA	NA	NA	835	2,050
EC-3	1/31/2011.	8 lõ 9	NA .	<0.00128	0.00713	<0.00128	59.4	59.40969	I.260	<.2. <b>5</b> ,200
EC-3(R)A	2/24/2011	8 10 9	NA	<0.0126	4.22	1.26	12.3	17.7926	515	640
EC-3(R)B	2/24/2011	8 10 9	NA	<0.00135	0.00204	<0.00135	<0.00406	0.0088	0.545	14.9
EC-4	1/31/2011	8 10 9	NA	<0.00126	<0.00126	<0.00126	<0.00379	<0.00757	0.722	44
EC-5	1/31/2011	14 10 15	NA	<0.0013	0.0156	0.04	0.123	0.1799	0.836	692

Note: Concentrations in **bold** and yellow exceed the applicable OCD Remeritation Action Level Note: Concentrations in **bold** and orange exceed the applicable of actualited EPA API TPH RESLS. Note: Excavation confirmation samples shaded indicates the area was overexcavated or sample was resubmitted for analysis. \* Indicates analysis of a new extraction from sample NA = Not Analyzed ND = Not Deciedd NE = Not Established

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	<u>.                                    </u>		S. CARI	LYTICAL RES	MPRESSOR	TED SOILS				
Sample I.D.	Date	Sample Depth (feet)	Chlorides (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)
NMAC Smali L	andfarm <i>Closure</i>	Performance Standards **	500	0.2	NE	NE	NE	50	54	00
TS-1	3/24/2011	0 10 0.5	410	<0.19	<0.23	<0.23	<0.69	<1.34	140 (J)	1,600
TS-1 (R)	6/20/2011	0 to 0.5	NA	NA	NA	NA	NA	NA	81 (J)	1,800
TS-1 (R2)	8/24/2011	0 to 0.5	NA	NA	NA	NA	NA	NA	<16	570
TS-1 (R3)	11/3/2011	0 to 0.5	120	NA	NA	NA	NA	NA	<9.8	440
TS-2	3/24/2011	0 to 0.5	310	<0.019	<0.023	<0.023	<0.069	<0.134	8.3 (J)	770
TS-2 (R)	6/20/2011	0 ю 0.5	NA	NA	NA	NA	NA	NA	<16	560
TS-2 (R2)	8/24/2011	0 10 0.5	NA	NA	NA	NA	NA	NA	<16	470
TS-3	3/24/2011	0 to 0.5	600	<0.19	<0.23	<0.23	0.83 (j)	1.48	<80	1,700
TS-3 (R)	6/20/2011	0 to 0.5	290	NA	NA	NA	NA	NA	<30	1,400
TS-3 (R2)	8/24/2011	0 10 0.5	NA	NA	NA	NA	NA	NA	<16	1,200
TS-3 (R3)	11/3/2011	0 to 0.5	120	NA	NA	NA	NA	. NA	<24	1,200
TS-3 (R4)	12/6/2011	0.5 ю 1	NA	NA	NA	NA	NA	NA	<4.8	270
TS-4	3/24/2011	0 to 0.5	270	<0.019	<0.023	<0.023	O. I.4 (j)	0.205	17 (j)	1,300
TS-4 (R)	6/20/2011	0 10 0.5	NA	NA	NA	NA	NA	NA	<15	820
TS-4 (R2)	8/24/2011	0 10 0.5	NA	NA	NA	NA	NA	NA	<7.5	250
TS-5	3/24/2011	0 10 0.5	440	<0.019	<0.023	<0.023	<0.069	<0.134	<8.0	1,300
TS-5 (R)	6/20/2011	0 to 0.5	NA	NA	NA	NA	NA	NA	1.6 (j)	14
TS-6	3/24/2011	0 10 0.5	190	<0.37	<0.46	<0.45	1.6 (j)	2.88	<160	2,000
TS-6 (R)	6/20/2011	0 10 0.5	NA	<0.018	<0.022	<0.021	<0.065	<0.126	<7.6	230
TS-7	3/24/2011	0 10 0.5	260	<0.019	<0.023	0.023 (j)	0.25 (j)	0.315	20 (J)	1,500
TS-7 (R)	6/20/2011	0 to 0.5	NA	NA	NA	· NA	NA	NA	<1.6	56
TS-8	3/24/2011	0 to 0.5	350	<0.019	0.039 (j)	0.069 (j)	0.09	0.217	47	1,500
TS-8 (R)	6/20/2011	0 10 0.5	NA	NA	NA	NA	NA	NA	<1.6	<3.5
TS-9	3/24/2011	0 10 0.5	410	<0.019	<0.023	0.023 (j)	<0.069	0.134	<8.0	. 650
TS-9 (R)	6/20/2011	0 10 0.5	NA	NA	NA	NA	NA	NA	<8.0	270
TS-10	3/24/2011	0 10 0.5	110	<0.19	<0.23	<0.23	<0.69	<1.34	<80	1,000
TS-10 (R)	6/20/2011	0 10 0.5	· NA	NA	NA	NA	NA	NA	<8.4	250

Note: Concentrations in **bold** and yellow exceed the applicable NMAC *Small Landiam Closure Performance Standards* (i) indicates that the analyte was reported at or above the Method Detection Limit and below the Practical Quantilation Limit NA = Not Analyzed NE = Not Established

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		<u> </u>	S. CARI	TABLE SBAD CON	2 (Cont.) APRESSOR	STATION	INF SAMPLES			
Sample I.D.	Date	Sample Depth	Chlorides (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)
NMAC Small L	andfarm <i>Closuro</i>	Performance Standards	500	0.2	NE	NE	NE	50	5	×
TS-11	3/24/2011	0 to 0.5	160	<0.19	<0.23	<0.23	<0.69	<1.34	<80	1,800
TS-11 (R)	6/20/2011	0 10 0.5	NA	NA	NA	NA	NA	NA	<16	790
TS-11 (R2)	8/24/2011	0 10 0.5	NA	NA	NA	NA	NA	NA	<1.5	350
TS-12	3/24/2011	0 to 0.5	160	<0.19	<0.23	<0.23	<0.69	<1.34	<80	1,400
TS-12 (R)	6/20/2011	0 10 0.5	NA	NA	NA	NA	NA	NA	<15	440
TS-13	3/24/2011	0 10 0.5	100	<0.37	<0.46	<0.45	<1.4	2.68	<160	1,900
TS-13 (R)	6/20/2011	0 10 0.5	NA	<0.24	<0.24	<0.24	<0.24	<0.48	<7.7	290
TS-14	3/24/2011	0 10 0.5	210	<0.19	<0.23	<0.23	<0.69	<1.34	<80	1,100
TS-14 (R)	6/20/2011	0 10 0.5	NA	NA	NA	NA	NA	NA	<15	500
TS-15	3/24/2011	0 10 0.5	210	<0.19	<0.23	<0.23	<0.69	<1.34	160 (j)	2,400
TS-15 (R)	6/20/2011	0 10 0.5	NA	NA	NA	NA	NA	NA	17 (j)	430
TS-16	3/24/2011	0 10 0.5	230	<0.19	<0.23	<0.23	<0.69	<1.34	210 (j)	1,900
TS-16 (R)	6/20/2011	0 10 0.5	NA	NA	NA	NA	NA	NA	<1.5	73
TS-17	3/24/2011	0 10 0.5	320	<0.037	<0.046	<0.045	<0.14	<0.268	<16	1,200
TS-17 (R)	6/20/2011	0 10 0.5	NA	NA	NA	NA	NA	NA	3.3 (j)	99
TS-18	3/24/2011	0 10 0.5	280	<0.19	<0.23	<0.23	<0.69	<1.34	<80	2,800
TS-18 (R)	6/20/2011	0 10 0.5	NA	NA	NA	NA	NA	NA	<1.6	63
TS-19	3/24/2011	0 to 0.5	290	<0.19	<0.23	<0.23	<0.69	<1.34	<80	2,700
TS-19 (R)	6/20/2011	0 to 0.5	NA	NA	NA	NA	NA	NA	<16	· 790
TS-19 (R2)	8/24/2011	0 10 0.5	NA	NA	NA	NA	NA	NA	<7.5	330
TS-20	3/24/2011	0 10 0.5	230	<0.19	<0.23	<0.23	<0.69	<1.34	<80	2,200
TS-20 (R)	6/20/2011	0 10 0.5	NA	NA	NA	NA	NA	NA	<1.6	72
VZ-1	3/3/2012	3 10 3.25	460	<0.0047	<0.0081	<0.0039	<0.0160	<0.0327	<1.4	<5.4
VZ-2	3/3/2012	3 10 3.25	1,300	<0.0046	<0.0079	<0.0038	<0.0160	<0.0323	<1.3	<5.4

Note: Concentrations in **bold** and yellow exceed the applicable NMAC *Small Lindlarm Closure Performance Standards* () indicates that the analyte was reported at or above the Method Detection Limit and below the Practical Quantilation Limit NA = Not AnalyzedNE = Not Established

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# API Site-Specific TPH RBSLs in Soil

R	esidential Soil F	BSLs		Coll I contract	Solt Loophies		
'Pathway:			ngestion, dermal	to GW (receptor located	to GW	Surface Soll to Outdoor Air	
		int Charles	halation pathw ays	beneath source): Tier 1 mg/kg	dow ngradient) Tier 2		
	RBSL for TPH	l (mg/kg)	5.0E+03	Soil res	Soil res	Soil Res	
	on Recidential S	oil PBSI s					
			Surface Soll	Soil Leaching	Soil Leaching		2
	Pathwa	Y in the second se	ngestion, dermal contact, and halation, pathw ays	(receptor located beneath source) Tier 1	(receptor located dow ngradient) Tier 2	to Outdoor Air	
	RBSL for TPH	(mg/kg)	5.3E+04	mg/kg	Soil res	Soil Res	
4	_						19. 19. <u>1</u>
MainMe	inu s	site-Specific ∏	PH RBSLs in S	Soll	Oils and Cond	ensates Databa	50
MainiMe Select S	nu ample Type : کاله	šite-Specific T	PH RBSLs in S	Soil .	Oils and Cond	ensates Databa ar Concentratio	Se Dins
Main Me Select S	inu ampte Type jii- joil Site-S	ite Specific (	PH RESLS In S	Boll Crude	Olis and Cond	ensatos Databa er Concentratio	59 517 518
Main;Me Select Si D S	nu ample Type Jil- Soil Site-S	Site-Specific T pecific TPH Site Descrip	PH RBSLs in S Data in Soil tion:	Soll . Crude	Olis and Cond	ensates Databa er Concentration	SG DIRB
MainiMe Select S E E S TPH Fractions	inu ample Type: Jil soll Site-S	Site-Specific T pecific TPH Site Descrip Concentration (mg/kg soil)	PH RBSLs in S Data in Soil tion:	Soil Crude	Oils and Cond Cle Cle Cle Cle Cle Cle Cle Cle Cle Cle	ensates Databa ar Concentration dion,/ Mole Fract (adj. for m balance),	se ons ion, ass X,
Main Me Select Si Select Si So S TPH Fractions Aliphatics: Se & Calinhatic	nu ample Type Jil Soil Site-S	Site-Specific T pecific TPH Site Descrip Concentratior (mg/kg soil) 6.1E+01	PH RBSLs in S Data in Soil tion: h Fraction of Total TPH	Soll Crude	Olis and Cond Cle lass Mass Frac Mole Frac	ensates Databa oer Concentration tion,/ tion,/ Mole Fract (adj. for mi balance),	SG DINB
Main Me Select S Select S Select S S S S S S S S S S S S S S S S S S S	nu ample Type jii joii Site-S	Site Specific T pecific TPH Site Descrip Concentratior (mg/kg soil) 6.1E+01 3.2E+02	PH RESLs in S Data in Soil tion: n Fraction c Total TPH 7:9E-02 4/1E-01	Soil Crude	Olis and Cond Cle Lass Mass Frac Mole Frac 27/9E-00 13/1E-00	ensates Databa ver Concentration tion,/ Mole Fract (adj. for m. batance), 1.1E01 1.4E01	se sins ion, ass X, metai
Main Me SelectS C TPH Fractions Aliphatics: >6.9 Caliphatic >8-10 C aliphatic >8-10 C aliphatic	ampte Type: Jil Joil Site-S	Site Specific T pecific TPH Site Descrip Concentratior (mg/kg soil) 6.1E+01 3.2E+02 1.6E+02 1.6E+02	PH RBSLs in S Data in Soil tion:	Soil Crude Adjusted M Fraction 7/9E-02 3/4/1E-01 2.0E-01	Olis and Cond Cle lass Mass Fract Mole Frac 27.9E-00 131E-00 132E-00	ensates Databa ar Concentration tion,/ Mole Fract (adj. for m. balance), 11E-01 13E-01	Se DIR DIR SASS X, SX, SX, SX, SX, SX, SX, SX, SX, SX
Main;Me Select Si C C C C C C C C C C C C C C C C C C C	inu ample Type: Jil soll Site-S	Site-Specific T pecific TPH Site Descrip Concentratior (mg/kg soil) 6.1E+01 3.2E+02 1.6E+02 1.0E+02 5.0E+01	PH RBSLs in S Data in Soil tion: n Fraction c Total TPH 20E-01 13E-01 13E-01	Soil     Crude       of     Adjusted N       H     Fraction       7/9E-02     41E-01       1.3E-01     1.3E-01       4.1E-01     1.3E-01	Olis and Cond Cle Lass Mass Frac Mole Frac 7.9E-04 Mole Frac 3.1E-03 1.3E-03 0.65E-04 0.65E-04	ensates Databa er Concentration don,/ Mole Fract (adj. for m balance), 1.1E:01	S6
Main Me Select Si C C TPH Fractions Aliphatics: >6.8 Caliphatic >8-10 C aliphatic >10-12 C aliphatic >12-16 C aliphatic >16-44 C alipha	ample Type: Jil Soll Site-S	Site-Specific T pecific TPH Site Descrip Concentratior (mg/kg soil) 6.1E+01 3.2E+02 1.6E+02 1.0E+02 5.0E+01	PH RBSLs in S Data in Soil tion: n Fraction c Total TPH 2/0E-01 4/11E-01 2/0E-01 1.3E-01	Soil     Crude       of     Adjusted N       H     Fraction       200     41 E01       1.3E01     1.3E01       4.5E-02     4.5E-02	Olis and Cond Cle Lass Mass Fract Mole Frac 7/9E-0 318E-0 6.5E-04 2.4E-04	ensates Databa per Concentration dion,/ Mole Fract (adj. for m balance), 1.1E-01 1.1E-	Son ass X,
Main Me Select Si Select Si C Caliphatics: >6:8 Caliphatic >8:10 Caliphati >10:12 Caliphati >12:16 Caliphati >16:44 Calipha >16:44 Caliphatics: >7:8 C Aromatic	ample Type Dil Soll Site-S	Site-Specific T pecific TPH Site Descrip Concentratior (mg/kg soil) 6.1E+01 3.2E+02 1.0E+02 1.0E+02 5.0E+01 3.6E+00	PH RBSLs in S       Data in Soil       tion:       n       Fraction c       7:9E-02       441E-01       2:0E-01       1.3E-01       1.3E-02       4-7E-03	of Adjusted M Fraction 7/9E/02 41E.01 1.3E.01 4.3E.02 4.47E.03	Olis and Cond Cie Sass Mass Fract Mole Frac 31E00 431E00 431E00 432E0 432E0 432E0 432E0 432E0 432E0 442E0	ensates Databa per Concentration tion,/ Mole Fract (adj. for m. batance), 1.1.1E.00 1.1.2E.01 1.4.3EE.01 1.4.3EE.02 3.5EE.02 7.3E.03	son ass X,
Main;Me Select S: C	ample Type: Dil Soll Site-S Sites tics tics tics	Site-Specific T pecific TPH Site Descrip Concentratior (mg/kg soil) 6.1E+01 3.2E+02 1.6E+02 1.6E+02 1.6E+02 5.0E+01 3.6E+00 4.9E+01	PH RBSLs in S       Data in Soil       tion:       n       Fraction c       7:9E-02       441E-01       2:0E:01       1.3E-01       2:0E:01       6:5E-02       6:4E:02	Soll     Crude       of     Adjusted N       H     Fraction       7/9E-02     441E-01       4.1.3E-01     6.5E-02       4.47E-03     6.4E-02	Olis and Cond Cle Mass Fact Mole Frac 31E-03 4-31E-03 4-31E-03 5-1E-04 5-3E-04 5-3E-04	ensates Databa per Concentration tion,/ tion,/ Mole Fract (adj. for m. balance), 1.1E01 1.2.45E01 1.3.6E02 1.3.6E02 1.3.6E02 1.7.3E03 1.7.6E02	S9
Main Me Select Si C 2 TPH Fractions Aliphatics: >6.8 Caliphatic >8-10 Caliphatic >10-12 Caliphatic >16-44 Calipha >16-44 Calipha >16-44 Caliphatic >7-8 C Aromatic >8-10 C aromatic	nu ample Type; Jil seil Site-S Site-S lics tics tics tics sites atics	Site-Specific T pecific TPH Site Descrip Concentration (mg/kg soil) 6.1E+01 3.2E+02 1.6E+02 1.6E+02 1.6E+02 5.0E+01 3.6E+00 4.9E+01 1.7E+01 1.1E+01	PH RBSLs in S Data in Soil tion: Praction of Total TPH 2/9E-02 4/11E-01 2/2E-02 4/7E-03 6/4E-02 2/2E-02 1/4E-02 2/2E-02 1/4E-02	Soll     Crude       of     Adjusted M       Praction     7/9E-02       441E-01     4.3E-01       4.3E-01     4.3E-02       4.47E-03     4.47E-03       4.47E-03     4.47E-03       4.47E-03     4.47E-03	Olis and Cond Cle Mass Fact Mole Frac 7.9E-0 3.31E-0 3.13E-0 4.65E-0 2.4E-0 5.3E-0 4.55E-0 4.65E-0 2.4E-0 5.3E-0 4.65E-0 4.65E-0 5.3E-0 5.3E-0 4.65E-0 5.3E	ensates Databa per Concentration tion,/ tion,/ Mole Fract (adj.for m. balance), 1.1E01 1.45E01 1.94E02 1.35E02 1.35E02 1.73E03 1.24E02 1.24E02 1.24E02 1.24E02	S9
Main Me Select S: C C C C C C C C C C C C C C C C C C C	nu ample Type: Jil seil Site-S Site-S tics tics tics tics tics atics atics atics	Site-Specific T pecific TPH Site Descrip Concentration (mg/kg soil) 6.1E+01 3.2E+02 1.6E+02 1.6E+02 1.6E+02 5.0E+01 3.6E+00 4.9E+01 1.7E+01 1.1E+01 2.9E+00	PH RBSLs in S Data in Soil tion: Praction of Total TPH 2:0E:01 2:0E:01 2:0E:01 2:0E:01 2:0E:01 2:0E:01 2:0E:01 2:0E:01 2:0E:01 2:0E:01 2:0E:02 4:1E:02 2:2E:02 1:4E:02 2:2E:02 1:4E:02	Soll     Crude       of     Adjusted M Fraction       7/9E-02     441E-01       4.1.3E-01     4.3E-01       4.3E-02     4.47E-03       4.47E-03     2.12E-02       4.47E-03     2.12E-02       4.47E-03     4.47E-03       4.47E-03     4.46-02       4.47E-03     4.46-02 <td>Olis and Cond Cle Mass Fact Mole Frac 7.9E-0. 3.31E-0. 4.65E-0. 4.65E-0. 5.3E-0. 4.65E-0. 4.65E-0. 5.3E-0. 4.65E-0. 5.3E-0.</td> <td>ensates Databa per Concentration tion,/ tion,/ Mole Fract (adj.for m. balance), 1.1E01 1.45E01 1.45E01 1.45E01 1.45E02 1.35E02</td> <td>S9</td>	Olis and Cond Cle Mass Fact Mole Frac 7.9E-0. 3.31E-0. 4.65E-0. 4.65E-0. 5.3E-0. 4.65E-0. 4.65E-0. 5.3E-0. 4.65E-0. 5.3E-0.	ensates Databa per Concentration tion,/ tion,/ Mole Fract (adj.for m. balance), 1.1E01 1.45E01 1.45E01 1.45E01 1.45E02 1.35E02	S9
Main Me Select S: C : C : C : C : C : C : C : C : C : C	nu ample Type: Jil Jol Site-S Site-S Lics Lics Lics Lics Lics Lics Lics Lics	Site-Specific T pecific TPH Site Descrip Concentratior (mg/kg soil) 6.1E+01 3.2E+02 1.6E+02 1.6E+02 1.0E+02 1.0E+02 1.0E+02 1.0E+02 1.0E+01 1.7E+01 1.7E+01 1.1E+01 2.9E+00 4.8E+00	PH RBSLs in Solition:       Data in Solition:       n       Fraction of Total TPH       2/0E-01       4/1E-01       1.3E-01       6.5E-02       4/7E-03       6.4E-02       2/2E-02       1.4E-02       2.12E-02       1.4E-02       2.12E-02       3.7E-03       6.2E-03	Soll     Crude       of     Adjusted M Fraction       7/9E-02     441E-01       4.1.3E-01     4.3E-01       4.3E-02     4.47E-03       4.47E-03     2.2E-02       4.47E-03     2.47E-03       4.47E-03     4.47E-03	Olis and Cond Cle Mass Fact Mole Frac 7.9E-0. 3.1E-0. 3.1E-0. 5.1E-0. 5.3E-0. 1.7E-0. 5.3E-0. 1.7E-0. 5.3E-0. 1.7E-0. 5.3E-0. 1.7E-0. 5.3E-0. 1.7E-0. 5.3E-0. 1.7E-0. 5.3E-0. 1.7E-0. 5.3E-0. 1.7E-0. 5.3E-0. 1.7E-0. 5.3E-0. 1.7E-0	ensates Databa per Concentration tion,/ tion,/ tion,/ 1.1E01 1.1	S9
Main Me Select Si C C C C C C C C C C C C C C C C C C C	nu ample Type: Dil soll Site-S S S S S S S S S S S S S S S S S S S	Site-Specific T Pecific TPH Site Descrip Concentration (mg/kg soil) 6.1E+01 3.2E+02 1.6E+02 1.0E+02 1.0E+02 1.0E+02 1.0E+02 1.0E+01 3.6E+00 4.8E+00 4.8E+00	PH RBSLs in S Data in Soil tion:	Soil     Crude       of     Adjusted N       Fraction     Fraction       2.0E.01     41E.02       412E.02     3.6.5E.02       47E.03     6.4E.02       2.2EE.02     3.7E.03       6.2EE.03     6.2E.03       1.4EE.02     3.7E.03       6.2E.03     1.0E+00	Olis and Cond Cle Iass Mass Fract Mole Frac 13E00 6:5E00 2.4E00 5:3E00 17E00	ensates Databa per Concentration tion,/ tion,/ databas (adj. for m. batance), 1.1E01 1	See
Main Me SelectS C C C C C C C C C C C C C C C C C C C	inu ampte Type: bil soll Site-S s s s s s s s s s s s s s s s s s s s	Site-Specific T pecific TPH Site Descrip Concentration (mg/kg soil) 6.1E+01 3.2E+02 1.0E+02 1.0E+02 1.0E+02 1.0E+02 1.0E+01 3.6E+00 4.9E+01 1.7E+01 1.1E+01 4.8E+00 NA	PH RBSLs in S Data in Soil tion:	Soil     Crude       of     Adjusted N       Fraction     Fraction       2.0E.01     4/1E.01       4.13E.01     4.35E.02       4.47E.03     6.5E.02       4.47E.03     6.2E.03       4.47E.03     6.2E.03       1.0E+00     1.0E+00       0.0E+00     0.0E+00	Olis and Cond Cle Cle Mass Fract Mole Frac 13E00 12E00 12E	ensates Databa per Concentration tion,/ tion,/ databas 1 1 E 01 1 4 5E 02 1 5 2 4 5 02 1 7 3 E 02 1 7 5 2 0 02 1 7 5 2 02 1 7 5 2 0	Se The set of the set
Main Me Select S C C C C C C C C C C C C C C C C C C C	inu ample Type: Jil Joil Site-S Site-S Site-S Sites Sites Sites Sites Sites Sites Sites Sites Sites Sites Site-Site-S Site-Site-Site-Site-Site-Site-Site-Site-	Site Specific T pecific TPH Site Descrip Concentration (mg/kg soil) 6.1E+01 3.2E+02 1.0E+02 1.0E+02 1.0E+02 1.0E+02 1.0E+01 3.6E+00 4.9E+01 1.7E+01 1.1E+01 2.9E+00 4.8E+00 NA 7.72E+02	PH RBSLs in S Data in Soil tion:	Soil     Crude       of     Adjusted N       Fraction     Fraction       2.0E.01     4/1E.01       4.1.3E.01     -       4.6.4E.02     -       4.7E.03     -  <	Olis and Cond Cle Cle Mass Fract Mole Frac 131E-02 131E-02 131E-02 131E-02 132E-02 122E-02	Ansates Databa ar Concentration ition,/ Mole Fract (adj. for m; batance), 1.1E01 3.42 (adj. for m; batance), 1.1E01 3.45E01 3.45E01 3.45E02 3.5E02 1.24E02 2.28E02 3.35E03 1.0E400 0.0E400 1.0E4000 1.0E4000 1.0E4000 1.0E4000	SP SP SP SP SP SP SP SP SP SP
Main Me Select S C C C C C C C C C C C C C C C C C C C	inu ample Type: jii Joil Site-S Site-S S S S S S S S S S S S S S S S S S S	Site Specific T pecific TPH Site Descrip Concentration (mg/kg soil) 6.1E+01 3.2E+02 1.0E+02 1.0E+02 1.0E+02 1.0E+02 1.0E+02 1.0E+01 1.7E+01 1.7E+01 1.1E+01 2.9E+00 4.8E+00 MA 7.72E+02 7.72E+02	PH RBSLs in Soil tion: Praction of Total TPP 7:9E-02 4:11E-01 2:0E-01 1:3E-01 1:3E-01 4:7E:03 6:5E-02 2:2E-02 1:4E-02 2:2E-02 1:4E-02 3:7E-03 1:6:2E-03 1:0E+00 1:0E+00 1:0E+00 1:0E+00	Soil     Crude       of     Adjusted N       Adjusted N     Fraction       7/9E-02     4/1E-01       2.0E-01     1.3E-01       4.1E-02     4/1E-02       2.47E-03     6.4E-02       4.14E-02     3.7E-03       6.2E-03     1.0E+00       1.0E+00     1.0E+00	Olis and Cond Cle Cle Mass Fract Moio Frac 13E00 12E00 12E	ensates Databa er Concentration ition,/ Mole Fract (adj. for mi batance), 1.1E01 9.4E02 1.35E02 7.3E02 1.24E02 1.24E02 1.24E02 1.24E02 1.24E02 1.0E400 0.00E400 1.0E400	SP SP SP SP SP SP SP SP SP SP

Note: Data calculated using TX1006 data from excavation confirmation sample EC-1(R)



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# APPENDIX E

Laboratory Analytical Reports & Chain of Custody Documentation

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Environmental Laboratories Bethany Tech Center • Suite 190 400 W. Bethany Rd. • Allen, Texas 75013 State Certifications Arkansas: 88-0647 Oklahoma: 8727



Louisiana: 02007 Kansas: E-10388 Texas: T104704232-10-1

# **Report of Sample Analysis**

Southwest Geoscience	Page: Page 1 of 14
8829 Tradeway Street	Project: S. Carlsbad C.S.
San Antonio, TX 78217	Project #: 0210003
ATTN: Joseph W. Martinez	Print Date/Time: 02/10/11 16:54

Attached is our analytical report for the samples received for your project. Below is a list of your individual sample descriptions with our corresponding laboratory number. We also have enclosed a copy of the Chain of Custody that was received with your samples and a form documenting the condition of your samples upon arrival. Please note any unused portion of the samples may be discarded upon expiration of the EPA holding time for the analysis performed or after 30 days from the above report date, unless you have requested otherwise.

**ERMI** Environmental Laboratories certifies that all results contained in this report were produced in accordance with the requirements of the National Environmental Laboratory Accreditation Program (NELAP) unless otherwise noted. The results presented apply to the samples analyzed in accordance with the chain-of-custody document(s) furnished with the samples. This report is intended for the sole use of the customer for whom the work was performed and must be reproduced, without modification, in its entirety.

#### Sample Identification

Laboratory ID #	Client Sample ID	<u>Matrix</u>	Sampled Date/Time	Received Date/Time
1102038-01	EC-1	Solid	01/31/11 11:00	02/03/11 12:28
1102038-02	EC-2	Solid	01/31/11 11:10	02/03/11 12:28
1102038-03	EC-3	Solid	01/31/11 11:20	02/03/11 12:28
1102038-04	EC-4	Solid	01/31/11 11:30	02/03/11 12:28
1102038-05	EC-5	Solid	01/31/11 11:40	02/03/11 12:28
		Case Narrative		

This project does not require TRRP specifications.



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## **Report of Sample Analysis**

Southwest Geoscience	Page:	Page 2 of	14
8829 Tradeway Street	Project:	S. Carls	bad C.S.
San Antonio, TX 78217	Project #:	02100	003
ATTN: Joseph W. Martinez	Print Date	e/Time:	02/10/11 16:54

The analytical data and results contained in this report, as well as their supporting data, conform with Texas Risk Reduction Program (TRRP), 30 TAC, Section 350, requirements and are of sufficient and documented quality to meet both TRRP objectives, TCEQ regulatory guidance No. RG-366/TRRP-13 and the project-based objective of achieving the lowest method detection limit (i.e., the TRRP Critical PCL where reasonably achievable or, if not reasonably achievable, the MQL). All information concerning analytical parameters, methods and protocols that might bear upon or otherwise affect the accuracy of the analytical data in this report have been provided or otherwise disclosed herein. The data were obtained using applicable and appropriate EPA SW-846 or Texas Commission on Environmental Quality approved analytical protocols, methodologies and quality assurance/quality control standards. **ERMI Environmental Laboratories** certifies that its quality control program is substantially and materially consistent with the International Organization for Standardization "Guide 25: General Requirements the Competence of Calibration and Testing Laboratories (ISO 25 3rd Edition, 1990)," as amended or the quality standards outlined in the National Environmental Laboratory Accreditation Program, as amended. The entire analytical data package for this report, including the supporting quality control data, will be retained and maintained for at least five (5) years (or such longer period of time as may be required by TRRP) from the report date at the offices of **ERMI Environmental Laboratories, 400 W. Bethany, Suite 190, Allen, Texas 75013.** 

I am responsible for the release of this laboratory data package. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Thank you for the opportunity to serve your environmental chemistry analysis needs. If you have any questions or concerns regarding this report please contact our Customer Service Department at the phone number below.

Respectfully submitted,

ndall K. Brown

Kendall K. Brown President

Std Rpt v.2.7-072610



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# **Report of Sample Analysis**

Southwest Ge	Southwest Geoscience 8829 Tradeway Street				Pag	e 3 of 14					
Son Antonio	ay Sileel			Project	. О. 						
				Project	.#: 	0210003	10/11 1	2·E4			
	n vv. martinez			Print D	ate/ I Im	ie: 02/	10/11 1	5.54			
Laboratory ID #: 1102038-01	<u>Sample Type</u> Grab		<u>Mat</u> Soli	<u>rrix</u> id			Sample ( Joseph W	Collecte /. Martine	<u>d By</u> ∋z	Cus	tomer
Sample Description			San	nple Date/1	Гime						
EC-1			01/3	31/11 1100							
Analyte(s)	Result	SRL	MRL	Units		Method	Batch	Analy Date/T	sis ime	Anlst	Flag
Total Petroleum Hydro	ocarbons - DRO					• • • • • • • • • • • • • • • • • • •					R-01
Ultrasonic Extraction	Completed	N/A	N/A	N/A	1.00	EPA 3550B	1B07008	02/07/11	0852	тк	
TPH Diese!	6040	181	2.9	mg/kg dry	49.94	EPA 8015B mod	1B07008	02/08/11	1926	PMS	
Surrogate a-Pinene (EPA 8015B mod)		ResultSp35.8 mg/kg dry3.8		Spike Conc. .89 mg/kg dry	Rec 9	<b>Recovery</b> 920 %		Limits )-112	Q-29		
Triacontane (EPA 8015B mod)			0.945	mg/kg dry	3.	.57 mg/kg dry	2	26 %	10	-140	
Total Petroleum Hydro	ocarbons - GRO										
TPH Gasoline	903	31.2	0.05	mg/kg dry	500.00	EPA 8015B mod	1 <b>B</b> 07005	02/09/11	1238	ΖT	R-01
Surrogate			R	lesult	9	Spike Conc.	Rec	overy	Rec.	Limits	
4-Bromofluorobenzene (E	EPA 8015B mod)	•	0.0827	' mg/kg dry	0.0	)625 mg/kg dry	/ 1.	32 %	55	5-140	
BTEX											R-01
Benzene	ND	12.5	1	ug/kg dry	10.00	EPA 8021B	1B07005	02/08/11	1716	ZT	Q-01
Ethyl Benzene	9230	625	1	ug/kg dry	500.00	EPA 8021B	1B07005	02/09/11	1238	ZT	
Toluene	13000	625	1	ug/kg dry	500.00	EPA 8021B	1B07005	02/09/11	1238	ZT	
Xylenes (total)	103000	1880	3	ug/kg dry	500.00	EPA 8021B	1B07005	02/09/11	1238	ZT	
Surrogate			R	lesult	:	Spike Conc.	Rec	overy	Rec.	Limits	
4-Bromofluorobenzene (E	l-Bromofluorobenzene (EPA 8021B)			274 ug/kg dry 625 ug/kg		25 ug/kg dry	g/kg dry 44 %		10	)-140	
4-Bromofluorobenzene (E	EPA 8021B)		45.0	ug/kg dry	6	2.5 ug/kg dry	7	2 %	10	-140	
Conventional Chemist	try Parameters										
% Solids	80	0.20	0.2	%	1.00	SM 2540G	1B04017	02/04/11	1655	ANH	



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Southwest Ge 8829 Tradewa San Antonio,		Page: Project Project	Pag : S #:	e 4 of 14 . Carlsbad C 0210003	S.S.						
ATTN: Joseph	n W. Martinez			Print D	ate/Tim	ne: 02/	10/11 10	6:54			
Laboratory ID #: 1102038-02	<u>Sample Type</u> Grab		<u>Mati</u> Soli	r <u>ix</u> d		5	Sample ( Joseph W	Collected	<u>By</u>	Cust	omer
Sample Description EC-2			<u>Sam</u> 01/3	<u>ple Date/T</u> 1/11 1110	<u>ïme</u>						
Analyte(s)	Result	SRL	MRL	Units	F*	Method	Batch	Analys Date/Tir	is ne A	nist	Flag
Total Petroleum Hydro	ocarbons - DRO			•							R-01
Ultrasonic Extraction	Completed	N/A	N/A	N/A	1.00	EPA 3550B	1807008	02/07/11 0	1852	тк	
TPH Diesel	4530	177	2.9	mg/kg dry	50.00	EPA 8015B mod	1807008	02/08/11 1	954 F	PMS	
Surrogate a-Pinene (FPA 8015B mo	od)		R 8 29 r	esult na/ka drv	3	Spike Conc. 81 ma/ka dry	Rec 2	overy I 18%	Rec. Lin 10-1	nits 12	Q-29
Triacontane (EPA 8015B mod)			0.484	ma/ka drv	3	.49 ma/ka drv	14 %		10-1-	40	
Total Petroleum Hydro	carbons - GPO										
TPH Gasoline	1.34	0.0611	0.05	mg/kg dry	1.00	EPA 8015B mod	1B07005	02/07/11 2	2015	ZT	
Surrogate			R	esult	:	Spike Conc.	Rec	overy I	Rec. Lin	nits	
4-Bromofluorobenzene (E	EPA 8015B mod)		0.0593	mg/kg dry	0.0	)611 mg/kg dry	, g	07 %	55-14	40	
BTEX											R-01
Benzene	ND	6.11	1	ug/kg dry	5.00	EPA 8021B	1B07005	02/08/11 1	948	ZT	Q-01
Ethyl Benzene	240	12.2	1	ug/kg dry	10.00	EPA 8021B	1B07005	02/09/11 1	339	ZT	
Toluene	214	12.2	1	ug/kg dry	10.00	EPA 8021B	1B07005	02/09/11 1	339	ΖŤ	
Xylenes (total)	16800	<sup>-</sup> 183	3	ug/kg dry	50.00	EPA 8021B	1807005	02/09/11 1	439	ZT	
Surrogate			R	esult	:	Spike Conc.	Rec	overy f	Rec. Lin	nits	
4-Bromofluorobenzene (E	PA 8021B)		586 ı	ıg/kg dry	3	806 ug/kg dry	1	92 %	10-14	40	Q-29
4-Bromofluorobenzene (E	PA 8021B)		814 L	ıg/kg dry	e	611 ug/kg dry	1.	33 %	10-14	40	
4-Bromofluorobenzene (E	PA 8021B)		74.7 u	ıg/kg dry	6	1.1 ug/kg dry	1:	22 %	10-14	40	
<b>Conventional Chemist</b>	ry Parameters										
% Solids	82	0.20	02	%	1.00	SM 2540G	1B04017	02/04/11 1	655 /	ANH	

% Solids

0.2

%

1.00

SM 2540G

0.20

ANH

1B04017 02/04/11 1655



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		Repo	ort of Sa	ample A	nalys	is					
Southwest G 8829 Tradew San Antonio, ATTN: Josep	eoscience ay Street TX 78217 h W. Martinez			Page: Projec Projec Print D	Page t: S. t #: 0ate/Tim	e 5 of 14 Carisbad C 0210003 e: 02/ <sup>/</sup>	.S. 10/11 10	6:54			
Laboratory ID #: 1102038-03 Sample Description EC-3	<u>Sample Type</u> Grab		<u>Mat</u> Soli <u>Sar</u> 01/3	<u>trix</u> id n <u>ple Date/</u> 31/11 1120	<u>Time</u> )	S	Sample ( Joseph W	Collected Martine	<u>d By</u> z	Cust	omer
Analyte(s)	Result	SRL	MRL	Units	F*	Method	Batch	Analy Date/Ti	sis ime	Anist	Flag
Total Petroleum Hydr Ultrasonic Extraction TPH Diesel	cocarbons - DRO Completed 5200	N/A 187	N/A 2.9	N/A mg/kg dry	1.00 49.86	EPA 3550B EPA 8015B mod	1807008 1807008	02/07/11 02/08/11	- 0852 2021	TK PMS	R-01
Surrogate a-Pinene (EPA 8015B m Triacontane (EPA 8015E	od) 3 mod)		F 31.5 1.65	Result mg/kg dry mg/kg dry	5 4. 3.	Spike Conc. 01 mg/kg dry 68 mg/kg dry	<b>Rec</b> 74	overy 87 % 15 %	Rec. 1( 1(	Limits )-112 )-140	Q-29
Total Petroleum Hydr	ocarbons - GRO										
TPH Gasoline	1260	32.3	0.05	mg/kg dry	500.00	EPA 8015B mod	1B07005	02/09/11	1510	ZT	R-01
Surrogate 4-Bromofluorobenzene (I	EPA 8015B mod)		F 0.156	Result mg/kg dry	s 0.0	<b>spike Conc.</b> 645 mg/kg dry	Rec 2	overy 41 %	<b>Rec</b> . 55	Limits 5-140	Q-29
BTEX Benzene	ND	1.28	1	ug/kg drv	0.99	EPA 8021B	1807005	02/07/11	2045	ZT	
Ethyl Benzene	ND	1.28	1	ug/kg	0.99	EPA 8021B	1807005	02/07/11	2045	ΖT	
Toluene	7.13	1.28	1	ary ug/kg drv	0.99	EPA 8021B	1B07005	02/07/11	2045	ΖT	
Xylenes (total)	59400	1920	3	ug/kg dry	497.02	EPA 8021B	1807005	02/09/11	1510	ΖT	R-01
Surrogate 4-Bromofluorobenzene (I	EPA 8021B)		F 49.1	Result ug/kg dry	5 64	Spike Conc. 4.1 ug/kg dry	Rec 7	overy 7 %	Rec. 1(	Limits )-140	0.29
Conventional Chamia	tri Darametere		100	uy/ky Ury	04	t. i uying ary	23	50 70	70	-140	Q-29
% Solids	rarameters 78	0.20	0.2	%	1.00	SM 2540G	1B04017	02/04/11	1655	ANH	

% Solids

0.20

0.2

%



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# **Report of Sample Analysis**

Southwest G	Southwest Geoscience			Page:	Pag	e 6 of 14		`		
8829 Tradew	ay Street			Project	:: S	. Carlsbad C	S.S.			
San Antonio,	TX 78217		·	Project	: #:	0210003				
ATTN: Josep	h W. Martinez			Print D	ate/Tim	1e: 02/	10/11 10	6:54		
Laboratory ID #: 1102038-04	Sample Type Grab		<u>Mat</u>	trix id			Sample (		By Cu	stomer
Sample Description			001				003001111		-	
EC-4	1		<u>5ar</u> 01/3	31/11 1130	line					
Analyte(s)	Result	SRL	MRL	Units	F*	Method	Batch	Analys Date/Tir	is ne Anist	Flag
Total Petroleum Hydr	ocarbons - DRO		•							
Ultrasonic Extraction	Completed	N/A	N/A	N/A	1.00	EPA 3550B	1 <b>B</b> 07008	02/07/11 0	0852 TK	
TPH Diesel	44.0	3.66	2.9	mg/kg dry	1.00	EPA 8015B mod	1807008	02/09/11 1	040 PMS	
Surrogate			F	Result	;	Spike Conc.	Rec	overy F	Rec. Limits	
a-Pinene (EPA 8015B m	iod)		2.21	mg/kg dry	3.	.93 mg/kg dry	5	6 %	10-112	
Triacontane (EPA 8015E	3 mod)		2.91	mg/kg dry	3.	.61 mg/kg dry	8	1 %	10-140	Q-11
Total Petroleum Hydr	ocarbons - GRO									
TPH Gasoline	0.722	0.0632	0.05	mg/kg dry	1.00	EPA 8015B mod	1B07005	02/08/11 1	918 ZT	
Surrogate			F	lesuit	;	Spike Conc.	Rec	overy F	Rec. Limits	
4-Bromofluorobenzene (	EPA 8015B mod)		0.102	mg/kg dry	0.0	)632 mg/kg dry	/ 1	52 %	55-140	Q-29
BTEX										
Benzene	ND	1.26	1	ug/kg dry	1.00	EPA 8021B	1 <b>B</b> 07005	02/08/11 1	918 ZT	
Ethyl Benzene	ND	1.26	1	ug/kg dry	1.00	EPA 8021B	1 <b>B</b> 07005	02/08/11 1	918 ZT	
Toluene	ND	1.26	1	ug/kg dry	1.00	EPA 8021B	1B07005	02/08/11 1	918 ZT	
Xylenes (total)	ND	3.79	3	ug/kg dry	1.00	EPA 8021B	1B07005	02/08/11 1	918 ZT	
Surrogate			F	lesult	:	Spike Conc.	Rec	overy F	Rec. Limits	
4-Bromofluorobenzene (l	EPA 8021B)		77.4	ug/kg dry	6	3.2 ug/kg dry	1:	22 %	10-140	
<b>Conventional Chemis</b>	try Parameters									
% Solids	79	0.20	0.2	%	1.00	SM 2540G	1B04018	02/04/11 1	730 ANH	



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0.20

0.2

%

1.00

SM 2540G

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Southwest G 8829 Tradew San Antonio, ATTN: Josep			Page: Project Project Print Da	Pag : S #: ate/Tim	e 7 of 14 . Carlsbad C 0210003 ne: 02/	.S. 10/11 16	6:54				
Laboratory ID #: 1102038-05 Sample Description	Sample Type Grab		<u>Mat</u> Soli	<u>rix</u> d nole Date/T	ime	<u>2</u>	Sample C Joseph W	Collected Martine	d By ez	Cust	tomer
EC-5			01/3	31/11 1140	1110						
Analyte(s)	Result	SRL		Units	F*	Method	Batch	Analy Date/T	sis ime	Anist	Flag
Total Petroleum Hydr	ocarbons - DRO		-	4							R-01
Ultrasonic Extraction	Completed	N/A	N/A	N/A	0.99	EPA 3550B	1B07008	02/07/11	0852	тк	
TPH Diesel	692	37.5	2.9	mg/kg dry	9.92	EPA 8015B mod	1 <b>B</b> 07008	02/09/11	0408	PMS	
Surrogate			R	lesult		Spike Conc.	Reco	overy	Rec.	Limits	
a-Pinene (EPA 8015B m	od)		3.71	mg/kg dry	4	.03 mg/kg dry	9	2 %	10	0-112	
Triacontane (EPA 8015B	3 mod)		4.09	mg/kg dry	3	.69 mg/kg dry	1:	11 %	10	0-140	
Total Petroleum Hydr	ocarbons - GRO										
TPH Gasoline	0.836	0.0649	0.05	mg/kg dry	1.00	EPA 8015B mod	1B07005	02/07/11	2146	ZT	
Surrogate			R	lesult		Spike Conc.	Reco	overy	Rec.	Limits	
4-Bromofluorobenzene (I	EPA 8015B mod)		0.0638	l mg/kg dry	. 0.0	)649 mg/kg dry	9	8 %	5	5-140	
BTEX											
Benzene	ND	1.30	1	ug/kg dry	1.00	EPA 8021B	1B07005	02/07/11	2146	ZT	
Ethyl Benzene	40.0	1.30	1	ug/kg drv	1.00	EPA 8021B	1807005	02/07/11	2146	ZT	
Toluene	15.6	1.30	1	ug/kg dry	1.00	EPA 8021B	1 <b>B</b> 07005	02/07/11	2146	ZT	
Xylenes (total)	123	3.90	3	ug/kg dry	1.00	EPA 8021B	1 <b>B</b> 07005	02/07/11	2146	ZT	
Surrogate			R	esult	:	Spike Conc.	Reco	overy	Rec.	Limits	
4-Bromofluorobenzene (l	EPA 8021B)		54.1 ug/kg dry 64		4.9 ug/kg dry	8	3 %	10	0-140		
<b>Conventional Chemis</b>	try Parameters										
% Solids	77	0.20	02	%	1.00	SM 2540G	1B04018	02/04/11	1730	ANH	

# **Report of Sample Analysis**

% Solids

ANH

1B04018 02/04/11 1730



1

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## **Report of Sample Analysis**

Southwest Geoscience 8829 Tradeway Street San Antonio, TX 78217 ATTN: Joseph W. Martinez Page: Page 8 of 14 Project: S. Carlsbad C.S. Project #: 0210003 Print Date/Time: 02/10/11 16:54

#### Total Petroleum Hydrocarbons - DRO - Quality Control

Analyte(s)	Result	*SRI	Units	Spike	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 1B07008 - EPA 35	50B Sonication Ex	traction	·		•					•
Blank (1B07008-BLK1) Prepared & Analyzed: 02/0	07/11 08:52									
Ultrasonic Extraction	Completed	N/A	N/A							
TPH Diesel	ND	2.89	mg/kg wet				•			
Surrogate: a-Pinene	2.48		mg/kg wet	3.11		80	10-109			
Surrogate: Triacontane	2.67		mg/kg wet	2.85		94	10-140			
Laboratory Control Sampl Prepared & Analyzed: 02/0	e (1B07008-BS1) 7/11 08:52									
Ultrasonic Extraction	Completed	N/A	N/A				0-0			
TPH Diesel	24.3	2.90	mg/kg wet	28.6		85	43-120			
Surrogate: a-Pinene	2.15		mg/kg wet	3.11		69	10-109			
Surrogate: Triacontane	1.65		mg/kg wet	2.86		58	10-140			
Laboratory Control Sampl Prepared & Analyzed: 02/0	e Duplicate (1B0700) 7/11 08:52	3-BSD1)								
Ultrasonic Extraction	Completed	N/A	· N/A				0-0		0	
TPH Diesel	25.1	2.90	mg/kg wet	28.5		88	43-120	4	20	
Surrogate: a-Pinene	2.19		mg/kg wet	3.11		70	10-109			
Surrogate: Triacontane	2.04		mg/kg wet	2.85		72	10-140			
Matrix Spike (1B07008-MS Prepared & Analyzed: 02/0	<b>1)</b> 7/11 08:52			s	ource: 110203	5-01RE1				
Ultrasonic Extraction	Completed	N/A	N/A				0-0			
TPH Diesel	1020	145	mg/kg wet	28.5	295	2530	1-150			Q-02, R-01
Surrogate: a-Pinene	3.39		mg/kg wet	3.11		109	1-109			R-01
Surrogate: Triacontane	0.0142		mg/kg wet	2.85		0	1-170			Q-30, R-01
Matrix Spike Duplicate (1B Prepared & Analyzed: 02/0	07008-MSD1) 7/11 08:52			s	ource: 110203	5-01RE1				
Ultrasonic Extraction	Completed	N/A	N/A				0-0		0	
TPH Diesel	1930	145	mg/kg wet	28.6	295	5730	1-150	62	43	Q-02, Q-04, R-01
Surrogate: a-Pinene	0.330		mg/kg wet	3.12		11	1-109			R-01
Surrogate: Triacontane	0.722		mg/kg wet	2 86		25	1-170			R-01



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Louisiana: 02007 Kansas: E-10388 Texas: T104704232-10-1

# **Report of Sample Analysis**

Page: Page 9 of 14
Project: S. Carlsbad C.S.
Project #: 0210003
Print Date/Time: 02/10/11 16:54

#### Total Petroleum Hydrocarbons - GRO - Quality Control

Analyte(s)	Result	*SRI	L Inits	Spike	Source Result	I %REC	%REC	RPD	RPD Limit	Flag
Batch 1B07005 - Purge-and	Trap and Extrac	tion-VOCs ir	n Soil					_	•	
Blank (1B07005-BLK1) Prepared: 02/07/11 09:03 Anal	yzed: 02/07/11 11:	17								
TPH Gasoline	ND	0.0500	mg/kg wet							
Surrogate: 4-Bromofluorobenzene	0.0564		mg/kg wet	0.0500		113	55-140			
Laboratory Control Sample (1) Prepared: 02/07/11 09:03 Anal	B07005-BS1) yzed: 02/07/11 11:4	47								
TPH Gasoline	0.457	0.0500	mg/kg wet	0.500		91	64-117			
Surrogate: 4-Bromofluorobenzene	0.0564		mg/kg wet	0.0500		113	15-212			
Laboratory Control Sample Du Prepared: 02/07/11 09:03 Anal	uplicate (1B07005-I yzed: 02/07/11 12:	<b>BSD1)</b> 18	J							
TPH Gasoline	0.462	0.0500	mg/kg wet	0.500		92	64-117	0.9	18	
Surrogate: 4-Bromofluorobenzene	0.0566		mg/kg wet	0.0500		113	15-212			
Matrix Spike (1B07005-MS1) Prepared: 02/07/11 09:03 Anal	yzed: 02/08/11 11:0	)8		So	urce: 110203	5-03RE2			<u> </u>	
TPH Gasoline	161	5.00	mg/kg wet	50.0	20.0	283	4-163			Q-02, R-01
Surrogate: 4-Bromofluorobenzene	0.159		mg/kg wet	0.500		32	15-212			
Matrix Spike Duplicate (18070 Prepared: 02/07/11 09:03 Analy	<b>05-MSD1)</b> yzed: 02/08/11 11:3	39		So	urce: 110203	5-03RE2				
TPH Gasoline	88.9	5.00	mg/kg wet	50.0	20.0	138	4-163	58	46	Q-04, R-01
Surrogate: 4-Bromofluorobenzene	0.129		mg/kg wet	0.500		26	15-212			

Std Rpt v.2.7-072610



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Louisiana: 02007 Kansas: E-10388 Texas: T104704232-10-1

# **Report of Sample Analysis**

Southwest Geoscience	Page: Page 10 of 14
8829 Tradeway Street	Project: S. Carlsbad C.S.
San Antonio, TX 78217	Project #: 0210003
ATTN: Joseph W. Martinez	Print Date/Time: 02/10/11 16:54

Analyte(s)	Result	*SRI	Units	Spike	Source Result	%REC	%REC. Limits	RPD	RPD Limit	Flag
Batch 1B07005 - Purge-and	-Trap and Extrac	tion-VOCs i	n Soil							
Blank (1B07005-BLK1) Prepared: 02/07/11 09:03 Anal	yzed: 02/07/11 11:	17								
Benzene	ND	1.00	ug/kg wet							
Ethyl Benzene	ND	1.00	ug/kg wet							
Toluene	ND	1.00	ug/kg wet							
Xylenes (total)	ND	3.00	ug/kg wet							
Surrogate: 4-Bromofluorobenzene	59.4		ug/kg wet	50.0		119	18-140			
Laboratory Control Sample (1) Prepared: 02/07/11 09:03 Anal	B07005-BS1) yzed: 02/07/11 11:	47								
Benzene	52.0	1.00	ug/kg wet	50.0		104	76-118			
Ethyl Benzene	46.6	1.00	ug/kg wet	50.0		93	68-124			
Toluene	45.3	1.00	ug/kg wet	50.0		91	76-120			
Xylenes (total)	136	3.00	ug/kg wet	150		90	70-123			
Surrogate: 4-Bromofluorobenzene	54.9		ug/kg wet	50.0		110	18-198			
Laboratory Control Sample Du Prepared: 02/07/11 09:03 Anal	uplicate (1B07005- yzed: 02/07/11 12:	<b>BSD1)</b> 18								
Benzene	52.2	1.00	ug/kg wet	50.0		104	76-118	0.3	12	
Ethyl Benzene	47.2	1.00	ug/kg wet	50.0		94	68-124	1	14	
Toluene	45.6	1.00	ug/kg wet	50.0		91	76-120	0.6	13	
Xylenes (total)	134	3.00	ug/kg wet	150		89	70-123	1	13	
Surrogate: 4-Bromofluorobenzene	54.2		ug/kg wet	50.0		108	18-198			
Matrix Spike (1B07005-MS1) Prepared: 02/07/11 09:03 Anal	yzed: 02/08/11 11:	08		So	urce: 110203	5-03RE2				R-01
Benzene	5590	100	ug/kg wet	5000	ND	112	21-150			
Ethyl Benzene	5970	100	ug/kg wet	5000	318	113	3-169			
Toluene	5520	100	ug/kg wet	5000	9.07	110	28-150			
Xylenes (total)	20900	300	ug/kg wet	15000	737	134	10-140			
Surrogate: 4-Bromofluorobenzene	862		ug/kg wet	500		172	18-198			



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Louisiana: 02007 Kansas: E-10388 Texas: T104704232-10-1

## **Report of Sample Analysis**

Southwest Geoscience 8829 Tradeway Street San Antonio, TX 78217 ATTN: Joseph W. Martinez Page:Page 11 of 14Project:S. Carlsbad C.S.Project #:0210003Print Date/Time:02/10/11 16:54

#### **BTEX - Quality Control**

				Spike	Source		%REC		RPD	
Analyte(s)	Result	*SRI	Units	Level	Result	%REC	Limits	RPD	Limit	Flag
Batch 1B07005 - Purge-a	nd-Trap and Extrac	tion-VOCs in	Soil (conti	nued)		•				_

Matrix Spike Duplicate (1B070) Prepared: 02/07/11 09:03 Analy	<b>05-MSD1)</b> /zed: 02/08/11 11:	39		So	urce: 1102035-	03RE2				R-01
Benzene	5300	100	ug/kg wet	5000	ND	106	21-150	5	29	
Ethyl Benzene	5010	100	ug/kg wet	5000	318	94	3-169	17	52	
Toluene	4660	100	ug/kg wet	5000	9.07	93	28-150	17	33	
Xylenes (total)	15900	300	ug/kg wet	15000	737	101	10-140	27	52	
Surrogate: 4-Bromofluorobenzene	609		ug/kg wet	500		122	18-198	6		



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# **Report of Sample Analysis**

Southwest Geoscience 8829 Tradeway Street San Antonio, TX 78217 ATTN: Joseph W. Martinez Page:Page 12 of 14Project:S. Carlsbad C.S.Project #:0210003Print Date/Time:02/10/11 16:54

#### Conventional Chemistry Parameters - Quality Control

Apalyte(s)	Result	*SRI	Units	Spike	Source Result	%REC		RPD Limit	Flag
Batch 1B04017						•			
Blank (1B04017-BLK1) Prepared & Analyzed: 02/04/11 16:5	5								
% Solids	ND	0.20	%						
Duplicate (1B04017-DUP1) Prepared & Analyzed: 02/04/11 16:5	5			Sour	ce: 1101579	-01			
% Solids	83	0.20	%		83		0	4	
Duplicate (1B04017-DUP2) Prepared & Analyzed: 02/04/11 16:5	5			Sour	ce: 1102036	-02			
% Solids	97	0.20	%		96		0.6	4	
Batch 1B04018									
Blank (1B04018-BLK1) Prepared & Analyzed: 02/04/11 17:3	0			·			<del>_</del>		
% Solids	ND	0.20	%						
Duplicate (1804018-DUP1) Prepared & Analyzed: 02/04/11 17:3	0			Sour	ce: 1102038	-04			
% Solids	79	0.20	%		79		0.3	4	



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# **Report of Sample Analysis**

Southwest Geoscience	Page:	Page 13 of	14
8829 Tradeway Street	Project:	S. Carlsba	ad C.S.
San Antonio, TX 78217	Project #:	021000	3
ATTN: Joseph W. Martinez	Print Date	/Time:	02/10/11 16:54

#### **Notes and Definitions**

The results presented in this report were generated using those methods given in 40 CFR Part 136 for Water and Wastewater samples and in SW-846 for RCRA/Solid Waste samples.

The recovery of the internal standard(s) was outside the acceptable range in this sample due to matrix interference. No target compounds were identified in the sample, therefore, this has no effect on the results presented.
The recovery of this analyte in the MS was outside the acceptable range due to interference, large dilutions required for analysis or a combination of these factors. The recovery of this analyte in the LCS(s) was within the acceptable range.
The RPD of this analyte between the MS(s) was outside of the acceptable range. The RPD of this same analyte between the LCS(s) was within the acceptable range.
The recovery of the calibration check standard for this analyte was lower than the acceptable range. This may indicate a low bias to the result presented.
The recovery of the surrogate in this sample was higher than the acceptable range due to matrix interference and/or large dilutions required for analysis. This may indicate a high bias to the compounds in the sample that this surrogate represents.
The recovery of the surrogate in this sample was lower than the acceptable range due to matrix interference and/or large dilutions required for analysis. This may indicate a low bias to the compounds in the sample that this surrogate represents.
The higher reporting limit is due to dilutions required for analysis as a result of a high concentration of target and/or non-target parameters in this sample.
Analyte NOT DETECTED at or above the reporting limit
Sample results reported on a dry weight basis
Laboratory Control Sample/Laboratory Control Sample Duplicate
Matrix Spike/Matrix Spike Duplicate
Relative Percent Difference
milligrams per kilogram
milligrams per liter
micrograms per kilogram
micrograms per liter
Not covered under scope of NELAP accreditation.
Calculated factor rounded to 3 significant figures. Concentration factor when <1.00 and dilution factor when >1.00.
Analyst Initials
Sample Reporting Limit



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Louisiana: 02007 Kansas: E-10388 Texas: T104704232-10-1

# **Report of Sample Analysis**

Southwest Geoscience	Page: Page 14 of 14
8829 Tradeway Street	Project: S. Carlsbad C.S.
San Antonio, TX 78217	Project #: 0210003
ATTN: Joseph W. Martinez	Print Date/Time: 02/10/11 16:54

MRL Method Reporting Limit

naa

This analysis/parameter is not accreditable under the current NELAP program

Std Rpt v.2.7-072610

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10000 Strong Arroll 8747 7752 8570 Express From This portion can be removed for Recipient's record Date Z/1/1 874777528570 EEL HERE П Sena Nam TRISH MOORE Phone 214 350-5469 FedEx Em COMPANY SOUTHWEST GEOSCIENCE Ab Express Freight So FedEx 1Day Fr Address 2551 W NORTHWEST HWY STE 321 MUR CH D'ALLAS State TX ZIP 75220-8409 Packaging Your Internal Billing Reference FedE FedEx . Other 0210002 To **Special Handling and Delivery Signature Option** 6 Recipie Name Lustie Underwood Phone 972 727 - 1123 SATURDAY Delivery ERMI-Company HOLD We Address 400 W. Bethany # 199- 190 HOLD Saturda Dry Ice Cargo Aircraft Only or the Mill B local Allen 15013 City State TX Obtain recip. Third Party Credit Card Cash/Check 0430025347 Total We 605 5279 · @1994-2010 Fodex · PRINTED IN U.S.A. SR Received at ERMI Melisse McCullouge 1228 2-3-11 6 Istall VestAl LAMO AD ALTIC ABORATORIES IT DATE 210-940-942 SIGNATURE Pari

Lab Number(s): \_

1102038

ERMI

# Sample Preservation Documentation\*

On Ice (Circle One) YES/OR NO (check if on Dry Ice\_\_\_\_\_

Parameters	Conta	niners Size	Required Preservation	Sample Container	Circle pH Note any discrepancy
Metals			pH < 2	Glass or Plastic	pH < 2
Dissolved Metals			Unpreserved prior to being filtered, Cool**	Glass or Plastic	
Hexavalent Chromium	[	i	CWA - pH 9.3-9.7, Cool; RCRA - Cool	Glass or Plastic	venneren Alexandi ele
Semivolatiles, Pesticides, PCBs, Herbicides			Cool	Glass only with Teflon lid	Chlorine Dyes Dno
VOA (BTEX, MTBE, 624, 8260, TPH-GRO)			Cool, pH < 2 Zero Head Space	40 ml VOA viai	ka Englande Njorije <sup>a da</sup> ns Prove opplenj
VOA (TPH-1005)			Cool, Zero Head Space Please check if collected in pre-weighed vials	40 ml VOA vial	
Phos., NO <sub>3</sub> /NO <sub>2</sub> , NH <sub>3</sub> N, COD, TKN,TOC			Cool, pH < 2	Glass or Plastic	pH < 2
TDS, BOD, CBOD, Cond, pH, TSS, F, SO₄, CI, Alk, Sulfite			Cool	Glass or Plastic, Plastic only if F	
Phenois, TPH-DRO			Cool, pH < 2	Glass only Teflon lid Foil lid	pH < 2
Oil & Grease, TPH (by 1664a)			Cool, pH < 2	Glass only Tefion lid Foil lid	OC NOT Street
Cyanide			Cool, pH >12	Glass or Plastic	pH > 12 Chlorine ⊡yes ⊡no Sulfide ⊡yes ⊡no ⊡na
Sulfide		·	Cool, pH > 9	Glass or Plastic	pH > 9
Bacteria			Cool	Plastic Sterile Cup	
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COMMENTS:\_\_

\*This form is used to document sample preservation. Circle parameter requested. Fill in number and size of containers received. Check pH (adjust if needed) and note if different from what is required and make a notation of any samples not received on ice. Note any incorrect sample containers or preservation on chain-of-custody.

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**Preservation Checked By** 

1000.0-3.2

Date

Time

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Q:\Form Masters\1000.0-3.2 Sample Preservation Form



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Louisiana: 02007 Kansas: E-10388 Texas: T104704232-10-1

## **Report of Sample Analysis**

Southwest Geoscience	Page: Page 1 of 13
8829 Tradeway Street	Project: S. Carlsbad Comp
San Antonio, TX 78217	Project #: 0210003
ATTN: Joseph W. Martinez	Print Date/Time: 03/02/11 15:21

Attached is our analytical report for the samples received for your project. Below is a list of your individual sample descriptions with our corresponding laboratory number. We also have enclosed a copy of the Chain of Custody that was received with your samples and a form documenting the condition of your samples upon arrival. Please note any unused portion of the samples may be discarded upon expiration of the EPA holding time for the analysis performed or after 30 days from the above report date, unless you have requested otherwise.

**ERMI** Environmental Laboratories certifies that all results contained in this report were produced in accordance with the requirements of the National Environmental Laboratory Accreditation Program (NELAP) unless otherwise noted. The results presented apply to the samples analyzed in accordance with the chain-of-custody document(s) furnished with the samples. This report is intended for the sole use of the customer for whom the work was performed and must be reproduced, without modification, in its entirety.

#### Sample Identification

Laboratory ID #	Client Sample ID	Matrix	Sampled Date/Time	Received Date/Time
1102642-01	EC-1 (R)	Solid	02/24/11 09:35	02/28/11 12:24
1102642-02	EC-2 (R)	Solid	02/24/11 09:40	02/28/11 12:24
1102642-03	EC-3 (R)A	Solid	02/24/11 09:45	02/28/11 12:24
1102642-04	EC-3 (R)B	Solid	02/24/11 09:50	02/28/11 12:24



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Louisiana: 02007 Kansas: E-10388 Texas: T104704232-10-1

## **Report of Sample Analysis**

Southwest Geoscience	Page:	Page 2 of 1	3
8829 Tradeway Street	Project:	S. Carlsb	oad Comp
San Antonio, TX 78217	Project #:	02100	03
ATTN: Joseph W. Martinez	Print Date	e/Time:	03/02/11 15:21

The analytical data and results contained in this report, as well as their supporting data, conform with Texas Risk Reduction Program (TRRP), 30 TAC, Section 350, requirements and are of sufficient and documented quality to meet both TRRP objectives, TCEQ regulatory guidance No. RG-366/TRRP-13 and the project-based objective of achieving the lowest method detection limit (i.e., the TRRP Critical PCL where reasonably achievable or, if not reasonably achievable, the MQL). All information concerning analytical parameters, methods and protocols that might bear upon or otherwise affect the accuracy of the analytical data in this report have been provided or otherwise disclosed herein. The data were obtained using applicable and appropriate EPA SW-846 or Texas Commission on Environmental Quality approved analytical protocols, methodologies and quality assurance/quality control standards. **ERMI Environmental Laboratories** certifies that its quality control program is substantially and materially consistent with the International Organization for Standardization "Guide 25: General Requirements the Competence of Calibration and Testing Laboratories (ISO 25 3rd Edition, 1990)," as amended or the quality standards outlined in the National Environmental Laboratory Accreditation Program, as amended. The entire analytical data package for this report, including the supporting quality control data, will be retained and maintained for at least five (5) years (or such longer period of time as may be required by TRRP) from the report date at the offices of **ERMI Environmental Laboratories**, 400 **W. Bethany, Suite 190, Allen, Texas 75013**.

I am responsible for the release of this laboratory data package. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Thank you for the opportunity to serve your environmental chemistry analysis needs. If you have any questions or concerns regarding this report please contact our Customer Service Department at the phone number below.

Respectfully submitted,

Sall K. Birun

Kendall K. Brown President

Std Rpt v.2.7-072610



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Louisiana: 02007 Kansas: E-10388 Texas: T104704232-10-1

# **Report of Sample Analysis**

Southwest G	eoscience			Page:	Pag	e 3 of 13					
8829 Tradew	ay Street			Project	t: S.	Carlsbad C	Comp				
San Antonio,	TX 78217			Project	t #:	0210003					
ATTN: Josep	h W. Martinez			Print D	ate/Tim	e: 03/	02/11 1	5:21			
Laboratory ID #: 1102642-01	<u>Sample Type</u> Grab		<u>Mat</u> Soli	trix id			Sample ( B. Chris N	Collecte Aitchell	d By	Cust	omer
Sample Description EC-1 (R)			<u>Sar</u> 02/2	<u>mple Date/`</u> 24/11 0935	<u>Time</u>						
Analyte(s)	Result	SRL	MRL	Units	F*	Method	Batch	Analy Date/T	/sis ime	Anist	Flag
Total Petroleum Hydr	ocarbons - DRO		·	•							R-01
Ultrasonic Extraction	Completed	N/A	N/A	N/A	1.00	EPA 3550B	1C01001	03/01/11	0758	BMW	
TPH Diesel	1250	34.9	2.9	mg/kg dry	9.96	EPA 8015B mod	1C01001	03/02/11	1 0437	PMS	
Surrogate			R	Result	5	Spike Conc.	Rec	overy	Rec.	Limits	
a-Pinene (EPA 8015B m	od)		12.8	mg/kg dry	3.	74 mg/kg dry	3.	41 %	10	-112	Q-29
Triacontane (EPA 8015B	3 mod)		4.44	mg/kg dry	3.	43 mg/kg dry	1:	29 %	10	-140	
Total Petroleum Hydr	ocarbons - GRO										R-01
TPH Gasoline	569	60.3	0.05	mg/kg dry	1,000.00	EPA 8015B mod	1C01025	03/01/11	2056	ТА	
Surrogate			R	lesult	5	Spike Conc.	Rec	overy	Rec.	Limits	
4-Bromofluorobenzene (l	EPA 8015B mod)		0.0699	) mg/kg dry	0.0	603 mg/kg dry	· 1	16 %	55	-140	
BTEX											R-01
Benzene	ND	12.3	1	ug/kg dry	10.20	EPA 8021B	1C01025	03/01/11	2003	ТА	Q-13
Ethyl Benzene	2620	603	1	ug/kg dry	500.00	EPA 8021B	1C01025	03/01/11	2030	ТА	
Toluene	13100	603	1	ug/kg dry	500.00	EPA 8021B	1C01025	03/01/11	2030	ТА	
Xylenes (total)	50100	1810	3	ug/kg dry	500.00	EPA 8021B	1001025	03/01/11	2030	TA	
Surrogate			R	lesult	\$	pike Conc.	Reco	overy	Rec.	Limits	
4-Bromofluorobenzene (B	EPA 8021B)		144	ug/kg dry	6	15 ug/kg dry	2	3 %	10	-140	
4-Bromofluorobenzene (B	EPA 8021B)		44.9	ug/kg dry	60	).3 ug/kg dry	7	4 %	10	-140	
<b>Conventional Chemis</b>	try Parameters										
% Solids	83	0.20	0.2	%	1.00	SM 2540G	1C01024	03/01/11	1530	RA	Q-26



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Southwest	t Geoscience			Page:	Page	e 4 of 13					
8829 Trad	eway Street			Projec	t: S.	Carlsbad C	Comp				
San Anton	iio, TX 78217			Projec	:t #:	0210003					
ATTN: Jos	eph W. Martinez			Print D	Date/Tim	e: 03/	02/11 1	5:21			
Laboratory ID #:	Sample Type		Ma	trix			Sample (	- Collected	By	Cus	tomer
1102642-02 Sample Depariation	Grab		Sol	id			B. Chris M	litchell		L	
EC-2 (R)	<u>L</u>		<u>Sar</u> 02/2	<u>nple Date/</u> 24/11 0940	<u>Time</u> )						
Analyte(s)	Result	SRL		Units	F*	Method	Batch	Analys Date/Tii	nis me	Anist	Flag
Total Petroleum Hy	vdrocarbons - DRO	•									R-01
Ultrasonic Extraction	Completed	N/A	N/A	N/A	1.00	EPA 3550B	1C01001	03/01/11 (	0758	BMW	
TPH Diesel	674	41.1	2.9	mg/kg dry	9.98	EPA 8015B mod	1C01001	03/02/11 (	0557	PMS	
Surrogate			F	Result	s	Spike Conc.	Reco	overy	Rec. L	.imits	
a-Pinene (EPA 8015E	3 mod)		7.65	mg/kg dry	4.	41 mg/kg dry	1	73 %	10-	-112	Q-29
Triacontane (EPA 80	15B mod)		4.47	mg/kg dry	4.	05 mg/kg dry	1	10 %	10-	140	
Total Petroleum Hy	ydrocarbons - GRO										R-01
TPH Gasoline	6980	317	0.05	mg/kg dry	4,464.29	EPA 8015B mod	1C01025	03/01/11 2	2148	ТА	·
Surrogate			R	Result	s	Spike Conc.	Reco	overy l	Rec. L	imits.	
4-Bromofluorobenzer	ne (EPA 8015B mod)		1.46	mg/kg dry	0.6	34 mg/kg dry	23	30 %	55-	140	Q-29
BTEX											R-01
Benzene	ND	12.7	1	ug/kg dry	8.93	EPA 8021B	1C01025	03/01/11 2	2122	TA	Q-01
Ethyl Benzene	836	710	1	ug/kg dry	500.00	EPA 8021B	1C01025	03/01/11 2	2148	TA	
Toluene	7980	710	1	ug/kg dry	500.00	EPA 8021B	1C01025	03/01/11 2	2148	ТА	
Xylenes (total)	25400	2130	3	ug/kg dry	500.00	EPA 8021B	1C01025	03/01/11 2	2148	TA	
Surrogate			R	lesult	s	pike Conc.	Reco	overy I	Rec. L	.imits	
4-Bromofluorobenzen	e (EPA 8021B)		469	ug/kg dry	6	34 ug/kg dry	7	4 %	10-	140	
4-Bromofluorobenzen	e (EPA 8021B)		85.5	ug/kg dry	73	1.0 ug/kg dry	12	20 %	10-	140	
Conventional Cher	nistry Parameters										
% Solids	70	0.20	0.2	%	1.00	SM 2540G	1C01024	03/01/11 1	1530	RA	

**Report of Sample Analysis** 

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# **Report of Sample Analysis**

Southwest Ge	eoscience			Page:	Page	e 5 of 13 Corlebod (	`omn				
Son Antonio				Piojec	ι. З. 	0210002	Jourb				
	N/ Martinez			Projec	L#: Note (Time	0210003	02/11 1	5.01			
				Print L	ate/ I m	e. 03/	02/11 1	5.21			
Laboratory ID #: 1102642-03	<u>Sample Type</u> Grab		<u>Mat</u> Sol	t <u>rix</u> id		<u></u>	Sample ( B. Chris N	Collecte /litchell	d By	Cus	tomer
Sample Description			Sar	nole Date/	Time						
EC-3 (R)A			02/2	24/11 0945	5						
				Unite			Batab	Analy	/sis		
Total Dataloum Hudre			MIKL	Units	<u> </u>	Wethou	Datcii	Dater	inie	Allist	Fiay
Ultrasonic Extraction	Completed	N/A	N/A	N/A	1.00	EPA 3550B	1C01001	03/01/1	1 0758	BMW	. <b>N-VI</b>
TPH Diesel	640	38.8	2.9	mg/kg dry	9.99	EPA 8015B mod	1C01001	03/02/1	1 0717	PMS	
Surrogate			F	Result	5	Spike Conc.	Rec	overy	Rec.	Limits	
a-Pinene (EPA 8015B mo	od)		6.91	mg/kg dry	4.	17 mg/kg dry	1	66 %	10	)-112	Q-29
Triacontane (EPA 8015B	mod)		4.98	mg/kg dry	3.	83 mg/kg dry	1.	30 %	10	)-140	
Total Petroleum Hydro	ocarbons - GRO										R-01
TPH Gasoline	515	33.5	0.05	mg/kg dry	500.00	EPA 8015B mod	1C01025	03/01/17	1 2307	ТА	
Surrogate			R	lesult	5	Spike Conc.	Rec	overy	Rec.	Limits	
4-Bromofluorobenzene (E	PA 8015B mod)		0.116	mg/kg dry	0.0	670 mg/kg dry	· 1	74 %	55	-140	Q-29
BTEX	•										R-01
Benzene	ND	12.6	1	ug/kg dry	9.43	EPA 8021B	1C01025	03/01/1	1 2241	TA	Q-01
Ethyi Benzene	1260	670	1	ug/kg dry	500.00	EPA 8021B	1C01025	03/01/11	1 2307	TA	
Toluene	4220	670	1	ug/kg dry	500.00	EPA 8021B	1C01025	03/01/17	1 2307	ТА	
Xylenes (total)	12300	2010	3	ug/kg dry	500.00	EPA 8021B	1C01025	03/01/11	2307	TA	
Surrogate			R	lesult	5	Spike Conc.	Rec	overy	Rec.	Limits	
4-Bromofluorobenzene (E	PA 8021B)		360	ug/kg dry	6	32 ug/kg dry	5	7%	10	-140	
4-Bromofluorobenzene (E	PA 8021B)		70.5	ug/kg dry	6	7.0 ug/kg dry	1	05 %	10	-140	
<b>Conventional Chemist</b>	ry Parameters										
% Solids	75	0.20	0.2	%	1.00	SM 2540G	1C01024	03/01/11	1530	RA	



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# **Report of Sample Analysis**

Southwest Ge	Southwest Geoscience 8829 Tradeway Street San Antonio, TX 78217					je 6 of 13 Carlshad (	omn				
San Antonio	TV 79217			Designed	. О 	0210002	omb				
ATTN: loson	h W Martinaz			Project	(#) 	0210003	02/11 1/	5.01			
				Print D	ate/1m	ie: 03/	02/11 1	5.21			
Laboratory ID #: 1102642-04	<u>Sample Type</u> Grab		<u>Mat</u> Sol	trix id			Sample ( B. Chris N	Collected Nitchell	<u>H By</u>	Cus	tomer
Sample Description EC-3 (R)B			<u>Sar</u> 02/2	nple Date/] 24/11 0950	<u>lime</u>						
Analyte(s)	Result	SRL	MRL	Units	F*	Method	Batch	Analy: Date/Ti	sis ime	Anist	Flag
Total Petroleum Hydro	ocarbons - DRO			•						•	
Ultrasonic Extraction	Completed	N/A	N/A	N/A	1.00	EPA 3550B	1C01001	03/01/11	0758	BMW	
TPH Diesel	14.9	3.96	2.9	mg/kg dry	1.00	EPA 8015B mod	1C01001	03/02/11	0815	PMS	Q-22
Surrogate			F	Result		Spike Conc.	Rec	overy	Rec.	Limits	
a-Pinene (EPA 8015B m	od)		2.34	mg/kg dry	4	.26 mg/kg dry	5	5 %	10	)-112	
Triacontane (EPA 8015B	mod)		3.40	mg/kg dry	3	.91 mg/kg dry	8	7 %	10	)-140	
Total Petroleum Hydro	ocarbons - GRO										
TPH Gasoline	0.545	0.0677	0.05	mg/kg dry	0.99	EPA 8015B mod	1C01025	03/01/11	1937	TA	
Surrogate			F	lesult		Spike Conc.	Reco	overy	Rec.	Limits	
4-Bromofluorobenzene (E	EPA 8015B mod)		0.112	mg/kg dry	0.0	) 677 mg/kg dry	· 10	65 <b>%</b>	55	5-140	Q-29
BTEX											
Benzene	ND	1.35	1	ug/kg dry	0.99	EPA 8021B	1C01025	03/01/11	1937	TA	
Ethyl Benzene	ND	1.35	1	ug/kg dry	0.99	EPA 8021B	1C01025	03/01/11	1937	TA	
Toluene	2.04	1.35	1	ug/kg dry	0.99	EPA 8021B	1C01025	03/01/11	1937	ТА	
Xylenes (total)	ND	4.06	3	ug/kg dry	0.99	EPA 8021B	1C01025	03/01/11	1937	ТА	
Surrogate			F	lesult		Spike Conc.	Reco	overy	Rec.	Limits	
4-Bromofluorobenzene (E	EPA 8021B)		71.4	ug/kg dry	6	7.7 ug/kg dry	10	05 %	10	-140	
Conventional Chemist	try Parameters										
% Solids	73	0.20	0.2	%	1.00	SM 2540G	1C01024	03/01/11	1530	RA	



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### **Report of Sample Analysis**

Southwest Geoscience 8829 Tradeway Street San Antonio, TX 78217 ATTN: Joseph W. Martinez Page:Page 7 of 13Project:S. Carlsbad CompProject #:0210003Print Date/Time:03/02/11 15:21

#### Total Petroleum Hydrocarbons - DRO - Quality Control

Analyte(s)	Result	*SRI	Units	Spike Level	Source Result	%REC	%REC Limit <u>s</u>	RPD	RPD	Flag
Batch 1C01001 - EPA 355	50B Sonication Ext	raction	•		•		•		•	•
Blank (1C01001-BLK1) Prepared & Analyzed: 03/01	1/11 07:58					. <u> </u>				
Ultrasonic Extraction	Completed	N/A	N/A							
TPH Diesel	ND	2.90	mg/kg wet							
Surrogate: a-Pinene	1.79		mg/kg wet	3.11		57	10-109			
Surrogate: Triacontane	2.29		mg/kg wet	2.85		80	10-140			
Laboratory Control Sample Prepared & Analyzed: 03/0	e (1C01001-BS1) 1/11 07:58								- *	
Ultrasonic Extraction	Completed	N/A	N/A				0-0			
TPH Diesel	28.5	2.90	mg/kg wet	28.6		100	43-120			
Surrogate: a-Pinene	2.05		mg/kg wet	3.11		66	10-109			
Surrogate: Triacontane	2.54		mg/kg wet	2.86		89	10-140			
Laboratory Control Sample Prepared & Analyzed: 03/07	Duplicate (1C01001- 1/11 07:58	BSD1)								
Ultrasonic Extraction	Completed	N/A	N/A				0-0		0	
TPH Diesel	28.2	2.89	mg/kg wet	28.5		99	43-120	0.8	20	
Surrogate: a-Pinene	2.01		mg/kg wet	3.11		65	10-109			
Surrogate: Triacontane	2.55		mg/kg wet	2.85		89	10-140			
Matrix Spike (1C01001-MS1 Prepared & Analyzed: 03/01	<b>1)</b> 1/11 07:58			So	ource: 110264	2-04RE1				R-01
Ultrasonic Extraction	Completed	N/A	N/A		ND		0-0			
TPH Diesel	96.2	39.7	mg/kg dry	391	ND	25	10-140			
Surrogate: a-Pinene	2.64		mg/kg dry	4.26		62	10-109			
Surrogate: Triacontane	4.08		mg/kg dry	3.91		104	10-140			
Matrix Spike Duplicate (1C) Prepared & Analyzed: 03/01	01001-MSD1) I/11 07:58			So	ource: 110264;	2-04RE1				R-01
Ultrasonic Extraction	Completed	N/A	N/A		ND		0-0		0	
TPH Diesel	73.9	39.6	mg/kg dry	390	ND	19	10-140	26	20	Q-04
Surrogate: a-Pinene	2.99		mg/kg dry	4.25		70	10-109			
Surrogate: Triacontane	4.29		mg/kg dry	3.90		110	10-140			



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# **Report of Sample Analysis**

Southwest Geoscience 8829 Tradeway Street San Antonio, TX 78217 ATTN: Joseph W. Martinez Page:Page 8 of 13Project:S. Carlsbad CompProject #:0210003Print Date/Time:03/02/11 15:21

#### Total Petroleum Hydrocarbons - GRO - Quality Control

				Spike	Source		%REC		RPD	
Analyte(s)	Result	*SRI	Units	l evel	Result	%REC	Limits	RPD	Limit	Flag
Batch 1C01025 - Purge-and	Trap and Extra	ction-VOCs in	n Soil							
Blank (1C01025-BLK1) Prepared: 03/01/11 15:35 Anal	yzed: 03/01/11 16	:33								
TPH Gasoline	ND	0.0499	mg/kg wet							
Surrogate: 4-Bromofluorobenzene	0.0529		mg/kg wet	0.0499		106	55-140			
Laboratory Control Sample (1) Prepared: 03/01/11 15:35 Anal	C01025-BS1) yzed: 03/01/11 17	:00				a.,				
TPH Gasoline	0.422	0.0497	mg/kg wet	0.497		85	66-117			
Surrogate: 4-Bromofluorobenzene	0.0513		mg/kg wet	0.0497		103	55-140			
Laboratory Control Sample Du Prepared: 03/01/11 15:35 Anal	plicate (1C01025 yzed: 03/01/11 17	- <b>BSD1)</b> :26								
TPH Gasoline	0.436	0.0498	mg/kg wet	0.498		88	66-117	3	18	
Surrogate: 4-Bromofluorobenzene	0.0517		mg/kg wet	0.0498		104	55-140			
Matrix Spike (1C01025-MS1) Prepared: 03/01/11 15:35 Anal	yzed: 03/01/11 17	:52		So	ource: 1102530	-14RE1				R-01
TPH Gasoline	4.70	0.510	mg/kg wet	5.10	0.637	80	10-140			
Surrogate: 4-Bromofluorobenzene	0.516		mg/kg wet	0.510		101	55-140			
Matrix Spike Duplicate (1C010 Prepared: 03/01/11 15:35 Analy	<b>25-MSD1)</b> yzed: 03/01/11 18	:18		So	ource: 1102530	-14RE1				R-01
TPH Gasoline	4.84	0.481	mg/kg wet	4.81	0.637	87	10-140	3	38	
Surrogate: 4-Bromofluorobenzene	0.490		mg/kg wet	0.481		102	55-140			



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## **Report of Sample Analysis**

Southwest Geoscience	Page: Page 9 of 13
8829 Tradeway Street	Project: S. Carlsbad Comp
San Antonio, TX 78217	Project #: 0210003
ATTN: Joseph W. Martinez	Print Date/Time: 03/02/11 15:21

**BTEX - Quality Control** 

						Spike	Source		%REC .		, RPD	
Analyte(s)		Result		*SRI	Units	Level	Result	%REC	Limits	RPD	Limit	Flag
Batch 1C01025 - Purge-and	d-Trap	o and Ext	ractio	n-VOCs i	n Soil							
Biank (1C01025-BLK1) Prepared: 03/01/11 15:35 Ana	alyzed	: 03/01/11	16:33							-		
Benzene		ND		0.998	ug/kg wet							
Ethyl Benzene		ND		0.998	ug/kg wet							
Toluene		ND		0.998	ug/kg wet							
Xylenes (total)		ND		2.99	ug/kg wet							
Surrogate: 4-Bromofluorobenzene		56.7			ug/kg wet	49.9		114	18-198			
Laboratory Control Sample (* Prepared: 03/01/11 15:35 Ana	1C010 alyzed:	<b>25-BS1)</b> : 03/01/11	17:00	<u></u>								
Benzene		46.8		0.994	ug/kg wet	49.7		94	76-118			
Ethyl Benzene		48.9		0.994	ug/kg wet	49.7		98	68-124			
Toluene		48.9		0.994	ug/kg wet	49.7		98	76-120			
Xylenes (total)		144		2.98	ug/kg wet	149		96	70-123			
Surrogate: 4-Bromofluorobenzene		53.5			ug/kg wet	49.7		108	18-198			
Laboratory Control Sample D Prepared: 03/01/11 15:35 Ana	) uplica alyzed:	ate (1C010 : 03/01/11	<b>25-BS</b> 17:26	D1)				<u> </u>				
Benzene		46.8		0.996	ug/kg wet	49.8		94	76-118	0.06	12	
Ethyl Benzene		51.2		0.996	ug/kg wet	49.8		103	68-124	5	14	
Toluene		50.5		0.996	ug/kg wet	49.8		101	76-120	3	13	
Xylenes (total)		149		2.99	ug/kg wet	149		100	70-123	4	13	
Surrogate: 4-Bromofluorobenzene		54.4			ug/kg wet	49.8		109	18-198			
Matrix Spike (1C01025-MS1) Prepared: 03/01/11 15:35 Ana	lyzed:	03/01/11	17:52			Se	ource: 1102530	-14RE1				R-01
Benzene		462		10.2	ug/kg wet	510	ND	90	21-140			
Ethyl Benzene		486		10.2	ug/kg wet	510	ND	95	10-140			
Toluene		487		10.2	ug/kg wet	510	15.9	92	28-140			
Xylenes (total)		1450		30.6	ug/kg wet	1530	ND	95	13-140			
Surrogate: 4-Bromofluorobenzene		527			ug/kg wet	510		103	18-140			



Xylenes (total)

Surrogate: 4-Bromofluorobenzene

1490

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40

### **Report of Sample Analysis**

Southwest Geoscience	Page: Page 10 of 13
8829 Tradeway Street	Project: S. Carlsbad Comp
San Antonio, TX 78217	Project #: 0210003
ATTN: Joseph W. Martinez	Print Date/Time: 03/02/11 15:21

#### **BTEX - Quality Control**

Analyte(s)	Result	*SRI	Units	Spike Level	Source Result	%REC	%REC	RPD	RPD Limit	Flag
Batch 1C01025 - Purge	e-and-Trap and Extra	ction-VOCs i	n Soil (conti	nued)					•	
Matrix Spike Duplicate ( Prepared: 03/01/11 15:3	<b>1C01025-MSD1)</b> 5 Analyzed: 03/01/11 18	:18		So	ource: 110253	0-14RE1				R-01
Benzene	489	9.62	ug/kg wet	481	ND	102	21-140	6	29	
Ethyl Benzene	514	9.62	ug/kg wet	481	ND	107	10-140	6	27	
Toluene	503	9.62	ug/kg wet	481	15.9	101	28-140	3	32	

1440

481

ND

103 13-140

107 18-140

3

ug/kg wet

ug/kg wet

28.8



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Louisiana: 02007 Kansas: E-10388 Texas: T104704232-10-1

### **Report of Sample Analysis**

Southwest Geoscience 8829 Tradeway Street San Antonio, TX 78217 ATTN: Joseph W. Martinez Page:Page 11 of 13Project:S. Carlsbad CompProject #:0210003Print Date/Time:03/02/11 15:21

#### Conventional Chemistry Parameters - Quality Control

Analyte(s)	Result	*SRI	Units	Spike	Source Result	%REC %REC Limits	RPD	RPD Limit	Flag
Batch 1C01024						· · ·	<u>~</u>	-	•
Blank (1C01024-BLK1) Prepared & Analyzed: 03/01/	/11 15:30								
% Solids	ND	0.20	%						
Duplicate (1C01024-DUP1) Prepared & Analyzed: 03/01/	/11 15:30			Sou	ırce: 1102642	2-01			
% Solids	76	0.20	%		83		9	4	Q-26



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Louisiana: 02007 Kansas: E-10388 Texas: T104704232-10-1

### **Report of Sample Analysis**

Southwest Geoscience	Page: Page 12 of 13
8829 Tradeway Street	Project: S. Carlsbad Comp
San Antonio, TX 78217	Project #: 0210003
ATTN: Joseph W. Martinez	Print Date/Time: 03/02/11 15:21

#### Notes and Definitions

The results presented in this report were generated using those methods given in 40 CFR Part 136 for Water and Wastewater samples and in SW-846 for RCRA/Solid Waste samples.

Q-01	The recovery of the internal standard(s) was outside the acceptable range in this sample due to matrix interference. No target compounds were identified in the sample, therefore, this has no effect on the results presented.
Q-04	The RPD of this analyte between the MS(s) was outside of the acceptable range. The RPD of this same analyte between the LCS(s) was within the acceptable range.
Q-13	The recovery of the internal standard used to quantify this result was higher than the acceptable range due to matrix interference. This causes a low bias to the result presented.
Q-22	The RPD between the MS(s) sample analyses was outside the acceptable range. This indicates the result was not as precise as expected.
Q-26	The RPD between duplicate analyses was outside of the acceptable range. This indicates the result was not as precise as expected.
Q-29	The recovery of the surrogate in this sample was higher than the acceptable range due to matrix interference and/or large dilutions required for analysis. This may indicate a high bias to the compounds in the sample that this surrogate represents.
R-01	The higher reporting limit is due to dilutions required for analysis as a result of a high concentration of target and/or non-target parameters in this sample.
ND	Analyte NOT DETECTED at or above the reporting limit
dry	Sample results reported on a dry weight basis
LCS/LCSD	Laboratory Control Sample/Laboratory Control Sample Duplicate
MS/MSD	Matrix Spike/Matrix Spike Duplicate
RPD	Relative Percent Difference
mg/kg	milligrams per kilogram
mg/l	milligrams per liter
ug/kg	micrograms per kilogram
ug/l	micrograms per liter
exc	Not covered under scope of NELAP accreditation.
F*	Calculated factor rounded to 3 significant figures. Concentration factor when <1.00 and dilution factor when <1.00.
Anist	Analyst Initials
SRL	Sample Reporting Limit
MRL	Method Reporting Limit



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Louisiana: 02007 Kansas: E-10388 Texas: T104704232-10-1

# **Report of Sample Analysis**

Southwest Geoscience 8829 Tradeway Street San Antonio, TX 78217 ATTN: Joseph W. Martinez Page: Page 13 of 13 Project: S. Carlsbad Comp Project #: 0210003 Print Date/Time: 03/02/11 15:21

naa

This analysis/parameter is not accreditable under the current NELAP program
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Matrix	Date	Time	CoEP	Grab	Identifying N	Narks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 L1.	250 mi	P/O		100						/ .	Lab Sa	Imple ID (Lab Use Only)
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(312) 001-73		ATTN:	<u></u>				
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1102042 Lab Number(s): \_\_\_\_

# ERM **Sample Preservation Documentation\***

On Ice (Circle One): YES OR NO (check if on Dry Ice\_\_\_\_\_

Parameters	Containers # Size	Required Preservation	Sample Container	Circle pH Note any discrepancy
Metals		pH < 2	Glass or Plastic	pH < 2
Dissolved Metals		Unpreserved prior to being filtered, Cool**	Glass or Plastic	
Hexavalent Chromium		CWA - pH 9.3-9.7, Cool; RCRA - Cool	Glass or Plastic	
Semivolatiles, Pesticides, PCBs, Herbicides		Cool	Glass only with Teflon lid	Chlorine Dyes Dno
VOA (BTEX, MTBE, 624, 8260, TPH-GRO)		Cool, pH < 2 Zero Head Space	40 mi VOA vial	
VOA (TPH-1005)		Cool, Zero Head Space Please check if collected in pre-weighed vials	40 ml VOA vial	NIGANOTICE #SI
Phos., NO <sub>3</sub> /NO <sub>2</sub> , NH <sub>3</sub> N, COD, TKN,TOC		Cool, pH < 2	Glass or Plastic	pH < 2
TDS, BOD, CBOD, Cond, pH, TSS, F, SO <sub>4</sub> , CI, Alk, Sulfite	:	Cool	Glass or Plastic, Plastic only if F	
Phenols, TPH-DRO		Cool, pH < 2	Glass only Teflon lid Foil lid	pH < 2
Oil & Grease, TPH (by 1664a)		Cool, pH < 2	Glass only Teflon lid Foil lid	DONELLE Check M
Cyanide		Cool, pH >12	Glass or Plastic	pH > 12 Chlorine Dyes Dno Sulfide Dyes Dno Dna
Sulfide		Cool, pH > 9	Glass or Plastic	pH > 9
Bacteria		Cool	Plastic Sterile Cup	
Soi), Sludge, Solid, Oil, Liquid	4 402	Cool Note: please check if collected in pre-weighed vials	GLASS	

Trip Blanks Received Dyes Dio Metals Preserved By Login Dyes Dno COMMENTS:

\*This form is used to document sample preservation. Circle parameter requested. Fill in number and size of containers received. Check pH (adjust if needed) and note if different from what is required and make a notation of any samples not received on ice. Note any incorrect sample containers or preservation on chain-of-custody. \*\*Cool means cooled to \$6°C but not trozen.

(c

**Preservation Checked By** 

1000.0-3.2

Date

ime kdy 7/10/08

Q:\Form Masters\1000.0-3.2 Sample Preservation Form



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Louisiana: 02007 Kansas: E-10388 Texas: T104704232-10-1

## **Report of Sample Analysis**

Southwest Geoscience	Page: Page 1 of 8
8829 Tradeway Street	Project: S. Carlsbad Comp
San Antonio, TX 78217	Project #: 0210003
ATTN: Joseph W. Martinez	Print Date/Time: 03/10/11 14:28

Attached is our analytical report for the samples received for your project. Below is a list of your individual sample descriptions with our corresponding laboratory number. We also have enclosed a copy of the Chain of Custody that was received with your samples and a form documenting the condition of your samples upon arrival. Please note any unused portion of the samples may be discarded upon expiration of the EPA holding time for the analysis performed or after 30 days from the above report date, unless you have requested otherwise.

**ERMI** Environmental Laboratories certifies that all results contained in this report were produced in accordance with the requirements of the National Environmental Laboratory Accreditation Program (NELAP) unless otherwise noted. The results presented apply to the samples analyzed in accordance with the chain-of-custody document(s) furnished with the samples. This report is intended for the sole use of the customer for whom the work was performed and must be reproduced, without modification, in its entirety.

#### Sample Identification

Laboratory ID #	Client Sample ID	Matrix	<u>x Sa</u>	ampled Date/Time	Received Date/Time
1103182-01	EC-2 (R)	Solid	02/	/24/11 09:40	03/07/11 16:33
		Case Narrative			

This project does not require TRRP specifications.



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Louisiana: 02007 Kansas: E-10388 Texas: T104704232-10-1

### **Report of Sample Analysis**

Southwest Geoscience	Page:	Page	e 2 of 8		
8829 Tradeway Street	Project:	S.	Carlsba	d Comp	
San Antonio, TX 78217	Project #	:	021000	3	
ATTN: Joseph W. Martinez	Print Date	e/Tim	e:	03/10/11	14:28

The analytical data and results contained in this report, as well as their supporting data, conform with Texas Risk Reduction Program (TRRP), 30 TAC, Section 350, requirements and are of sufficient and documented quality to meet both TRRP objectives, TCEQ regulatory guidance No. RG-366/TRRP-13 and the project-based objective of achieving the lowest method detection limit (i.e., the TRRP Critical PCL where reasonably achievable or, if not reasonably achievable, the MQL). All information concerning analytical parameters, methods and protocols that might bear upon or otherwise affect the accuracy of the analytical data in this report have been provided or otherwise disclosed herein. The data were obtained using applicable and appropriate EPA SW-846 or Texas Commission on Environmental Quality approved analytical protocols, methodologies and quality assurance/quality control standards. **ERMI Environmental Laboratories** certifies that its quality control program is substantially and materially consistent with the International Organization for Standardization "Guide 25: General Requirements the Competence of Calibration and Testing Laboratories (ISO 25 3rd Edition, 1990)," as amended or the quality standards outlined in the National Environmental Laboratory Accreditation Program, as amended. The entire analytical data package for this report, including the supporting quality control data, will be retained and maintained for at least five (5) years (or such longer period of time as may be required by TRRP) from the report date at the offices of **ERMI Environmental Laboratories**, 400 **W. Bethany, Suite 190, Allen, Texas 75013**.

I am responsible for the release of this laboratory data package. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Thank you for the opportunity to serve your environmental chemistry analysis needs. If you have any questions or concerns regarding this report please contact our Customer Service Department at the phone number below.

Respectfully submitted,

endall X. Birun

Kendall K. Brown President

Std Rpt v.2.7-072610



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Louisiana: 02007 Kansas: E-10388 Texas: T104704232-10-1

Southwest Geo 8829 Tradeway San Antonio, T. ATTN: Joseph	oscience / Street X 78217 W. Martinez			Page: Project Project Print D	Page :: S. : #: ate/Time	e 3 of 8 Carlsbad C 0210003 e: 03/ <sup>-</sup>	omp 10/11 14	4:28		
Laboratory ID #: 1103182-01	<u>Sample Type</u> Grab		<u>Mat</u> Soli	<u>rix</u> d		S	Sample C 3. Chris M	Collected By	Cus	tomer
<u>Sample Description</u> EC-2 (R)			<u>San</u> 02/2	nple Date/1 24/11 0940	<u> Time</u>					
Analyte(s)	Result	SRL	MRL	Units	F*	Method	Batch	Analysis Date/Time	Anist	Flag
Total Petroleum Hydroc	carbons - DRO	N/A	N/A	N/A	1.74	EPA 3550B	1C09007	03/09/11 0848	тк	R-01
PH Diesel	2050	71.8	2.9	mg/kg dry	17.44	EPA 8015B mod	1C09007	03/10/11 0948	PMS	Q-21, Q-22
Surrogate			R	esult	s	pike Conc.	Reco	overy Rec	. Limits	
a-Pinene (EPA 8015B mod	)		14.9 r	ng/kg dry	7.7	71 mg/kg dry	19	93 % ·	10-112	Q-10, Q-29
Triacontane (EPA 8015B m	nod)		7.09 r	ng/kg dry	7.0	)8 mg/kg dry	10	00 % ·	10-140	
Total Petroleum Hydrod	arbons - GRO									
IPH Gasoline	835	35.5	0.05	mg/kg dry	500.00	EPA 8015B mod	1C08011	03/08/11 2000	ZT	R-01
Surrogate			R	esult	s	pike Conc.	Reco	overy Rec	. Limits	
4-Bromofluorobenzene (EP	PA 8015B mod)		0.174	mg/kg dry	0.07	10 mg/kg dry	24	15 %	55-140	Q-29
Conventional Chemistry	y Parameters									
% Solids	70	0.20	0.2	%	1.00	SM 2540G	1C01024	03/01/11 1530	RA	



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Louisiana: 02007 Kansas: E-10388 Texas: T104704232-10-1

### **Report of Sample Analysis**

Southwest Geoscience 8829 Tradeway Street San Antonio, TX 78217 ATTN: Joseph W. Martinez Page:Page 4 of 8Project:S. Carlsbad CompProject #:0210003Print Date/Time:03/10/11 14:28

#### Total Petroleum Hydrocarbons - DRO - Quality Control

Analyte(s)	Result	*SRI	Units	Spike Level	Source Result	8 %REC	%REC Limits	RPD	RPD Limit	Flag
Batch 1C09007 - EPA 3550E	3 Sonication Ex	traction					•		•	,
Blank (1C09007-BLK1) Prepared & Analyzed: 03/09/11	1 08:48	<u></u>								
Ultrasonic Extraction	Completed	N/A	N/A							
TPH Diesel	ND	2.89	mg/kg wet							
Surrogate: a-Pinene	1.67		mg/kg wet	3.10		54	10-109			
Surrogate: Triacontane	2.47	,	mg/kg wet	2.85		87	10-140			
Laboratory Control Sample (1) Prepared & Analyzed: 03/09/12	<b>C09007-BS1)</b> 1 08:48									
Ultrasonic Extraction	Completed	N/A	N/A				0-0			
TPH Diesel	26.9	2.89	mg/kg wet	28.5		94	43-120			
Surrogate: a-Pinene	1.69		mg/kg wet	3.11		54	10-109			
Surrogate: Triacontane	2.40		mg/kg wet	2.85		84	10-140			
Laboratory Control Sample Du Prepared & Analyzed: 03/09/11	uplicate (1C09007 1 08:48	7-BSD1)								
Ultrasonic Extraction	Completed	N/A	N/A				0-0		0	
TPH Diesel	30.1	2.88	mg/kg wet	28.4		106	43-120	11	20	
Surrogate: a-Pinene	1.95		mg/kg wet	3.10		63	10-109			
Surrogate: Triacontane	2.58		mg/kg wet	2.84		91	10-140			
Matrix Spike (1C09007-MS1) Prepared & Analyzed: 03/09/11	1 08:48			So	ource: 110318	2-01				R-01
Ultrasonic Extraction	Completed	N/A	N/A		ND		0-0			
TPH Diesel	1540	71.9	mg/kg dry	709	2050	-71	10-140			Q-02, R-01
Surrogate: a-Pinene	11.9		mg/kg dry	7.73		154	10-109			Q-10, Q-29, R-01
Surrogate: Triacontane	5.54		mg/kg dry	7.09		78	10-140			R-01
Matrix Spike Duplicate (1C090 Prepared & Analyzed: 03/09/11	<b>07-MSD1)</b> I 08:48			So	ource: 110318	2-01				R-01
Ultrasonic Extraction	Completed	N/A	N/A		ND		0-0		0	
TPH Diesel	1200	71.6	mg/kg dry	706	2050	-120	10-140	25	20	Q-02, Q-04, R-01
Surrogate: a-Pinene	10.4		mg/kg dry	7.69		135	10-109			Q-10, Q-29, R-01
Surrogate: Triacontane	6.33		mg/kg dry	7.06		90	10-140			R-01



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Louisiana: 02007 Kansas: E-10388 Texas: T104704232-10-1

## **Report of Sample Analysis**

Southwest Geoscience	Page
8829 Tradeway Street	Proje
San Antonio, TX 78217	Proje
ATTN: Joseph W. Martinez	Print

Page:Page 5 of 8Project:S. Carlsbad CompProject #:0210003Print Date/Time:03/10/11 14:28

#### Total Petroleum Hydrocarbons - GRO - Quality Control

				Spike	Source		%REC		RPD	I
Analyte(s)	Result	*SRI	Units	level	Result	%REC	Limits	RPD	Limit	Flag
Batch 1C08011 - Purge-and-T	rap and Extract	tion-VOCs ir	n Soil							
Blank (1C08011-BLK1) Prepared: 03/08/11 10:32 Analyz	zed: 03/08/11 11:4	.0								
TPH Gasoline	ND	0.0500	mg/kg wet							
Surrogate: 4-Bromofluorobenzene	0.0527		mg/kg wet	0.0500		105	55-140			
Laboratory Control Sample (100 Prepared: 03/08/11 10:32 Analyz	08011-BS1) 2ed: 03/08/11 12:0	6								
TPH Gasoline	0.477	0.0500	mg/kg wet	0.500		95	66-117			
Surrogate: 4-Bromofluorobenzene	0.0535		mg/kg wet	0.0500		107	55-140			
Laboratory Control Sample Dup Prepared: 03/08/11 10:32 Analyz	licate (1C08011-E	SD1) 2								
TPH Gasoline	0.482	0.0500	mg/kg wet	0.500		96	66-117	1	18	
Surrogate: 4-Bromofluorobenzene	0.0537		mg/kg wet	0.0500		107	55-140			
Matrix Spike (1C08011-MS1) Prepared: 03/08/11 10:32 Analyz	ed: 03/08/11 18:1	5		s	ource: 1103182-	01RE1				
TPH Gasoline	1050	35.5	mg/kg dry	355	835	60	10-140			R-01
Surrogate: 4-Bromofluorobenzene	0.190		mg/kg dry	0.0710		267	55-140			Q-29
Matrix Spike Duplicate (1C0801) Prepared: 03/08/11 10:32 Analyz	1-MSD1) ed: 03/08/11 18:4	2		s	jource: 1103182-	01RE1				
TPH Gasoline	961	35.5	mg/kg dry	355	835	36	10-140	9	38	R-01
Surrogate: 4-Bromofluorobenzene	0.184		mg/kg dry	0.0710		260	55-140			Q-29

Local: (972) 727-1123

Std Rpt v.2.7-072610



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### **Report of Sample Analysis**

Southwest Geoscience 8829 Tradeway Street San Antonio, TX 78217 ATTN: Joseph W. Martinez Page:Page 6 of 8Project:S. Carlsbad CompProject #:0210003Print Date/Time:03/10/11 14:28

#### Conventional Chemistry Parameters - Quality Control

Analyte(s)	Result	*SRI	Units	Spike	Source Result	% %REC_Li	REC mits RPE	RPD Limit	Flag
Batch 1C01024			•	•					•
Blank (1C01024-BLK1) Prepared & Analyzed: 03/01/11	15:30	-							
% Solids	ND	0.20	%						
Duplicate (1C01024-DUP1) Prepared & Analyzed: 03/01/11	15:30			Sou	rce: 1102642	2-01			
% Solids	76	0.20	%		83		9	4	Q-26
Duplicate (1C01024-DUP2) Prepared & Analyzed: 03/01/11	15:30			Sou	rce: 1103136	-01			
% Solids	76	0.20	%		83		9	4	Q-26



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## **Report of Sample Analysis**

Southwest Geoscience	Page: Page 7 of 8
8829 Tradeway Street	Project: S. Carlsbad Comp
San Antonio, TX 78217	Project #: 0210003
ATTN: Joseph W. Martinez	Print Date/Time: 03/10/11 14:28

#### **Notes and Definitions**

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The results presented in this report were generated using those methods given in 40 CFR Part 136 for Water and Wastewater samples and in SW-846 for RCRA/Solid Waste samples.

Q-02	The recovery of this analyte in the MS was outside the acceptable range due to interference, large dilutions required for analysis or a combination of these factors. The recovery of this analyte in the LCS(s) was within the acceptable range.
Q-04	The RPD of this analyte between the MS(s) was outside of the acceptable range. The RPD of this same analyte between the LCS(s) was within the acceptable range.
Q-10	The recovery of the calibration check standard for this analyte was higher than the acceptable range. This may indicate a high bias to the result presented.
Q-21	The recovery of this analyte in the MS was lower than the acceptable range. This indicates a low bias to the result presented.
Q-22	The RPD between the MS(s) sample analyses was outside the acceptable range. This indicates the result was not as precise as expected.
Q-26	The RPD between duplicate analyses was outside of the acceptable range. This indicates the result was not as precise as expected.
Q-29	The recovery of the surrogate in this sample was higher than the acceptable range due to matrix interference and/or large dilutions required for analysis. This may indicate a high bias to the compounds in the sample that this surrogate represents.
R-01	The higher reporting limit is due to dilutions required for analysis as a result of a high concentration of target and/or non-target parameters in this sample.
ND	Analyte NOT DETECTED at or above the reporting limit
dry	Sample results reported on a dry weight basis
LCS/LCSD	Laboratory Control Sample/Laboratory Control Sample Duplicate
MS/MSD	Matrix Spike/Matrix Spike Duplicate
RPD	Relative Percent Difference
mg/kg	milligrams per kilogram
mg/l	milligrams per liter
ug/kg	micrograms per kilogram
ug/l	micrograms per liter
exc	Not covered under scope of NELAP accreditation.
F*	Calculated factor rounded to 3 significant figures. Concentration factor when <1.00 and dilution factor when <1.00.
Anlst	Analyst Initials
SRL	Sample Reporting Limit



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Louisiana: 02007 Kansas: E-10388 Texas: T104704232-10-1

## **Report of Sample Analysis**

Southwest Geoscience	Page: Page 8 of 8
8829 Tradeway Street	Project: S. Carlsbad Comp
San Antonio, TX 78217	Project #: 0210003
ATTN: Joseph W. Martinez	Print Date/Time: 03/10/11 14:28

MRL Method Reporting Limit

naa

Method Reporting Limit

This analysis/parameter is not accreditable under the current NELAP program

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CONTRACTOR OF

1103182:01 Kr

#### **Customer Service**

From: Shelly Connelly

Sent: Monday, March 07, 2011 4:33 PM

To: Customer Service Department

Subject: RE: Rush Report: S. Carlsbad Comp - 1102642 Please re-log sample 1102642-02 for TPH GRO/TPH-DRO to be due EOD Thursday

All other statements about extracting and holding noted below have been cancelled until further notice.

Shelly

From: Joseph Martinez [mailto:Joseph.Martinez@southwestgeoscience.com]
Sent: Monday, March 07, 2011 2:43 PM
To: 'ERMI Environmental Services'
Cc: 'Chris Mitchell'
Subject: RE: Rush Report: S. Carlsbad Comp - 1102642

Please rerun soil sample EC-2(R) for TPH GRO/DRO using EPA #8015B using 100% TAT. The concentration percentage of TPH GRO to DRO on the previous results appeared to be inverted compared to the other samples on this job, as well as previous samples.

In addition, please start the extraction process for the soil samples that were sent for the same project, collected on 2.25.11, with the following IDs: B-3 (6-7), B-4 (3-4), B-4 (5-6), B-5 (4-5), B-6 (4-5), B-6 (7-8), B-7 (2-3), B-7 (5-6), B-8 (4-5), B-8 (7-8), B-9 (4-5), and B-9 (7-8). We will be in touch at a later date as to whether we will need them analyzed.

Thanks,

Joseph

From: ERMI Environmental Services [mailto:custserv@ermilab.com] Sent: Wednesday, March 02, 2011 5:30 PM To: Joseph Martinez Subject: Rush Report: S. Carlsbad Comp - 1102642

Attached are your results. We appreciate your business.

Our goal is to provide 100% customer satisfaction. Please click on the link and let us know how we performed for you, <u>Customer Satisfaction Survey</u>.

Leslie Underwood Customer Service **ERMI** Environmental Laboratories Phone: (972) 727-1123 Fax: (972) 727-1175 E-Mail: <u>custserv@ermilab.com</u> Celebrating 27 Years Serving You!

This message is for the designated recipient only and may contain privileged, proprietary, or otherwise private information. If you are not the intended recipient, please delete without copying and kindly advise us by e-mail of the mistake in delivery.

3/7/2011



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## **Report of Sample Analysis**

Southwest Geoscience	Page: Page 1 of 13
8829 Tradeway Street	Project: S. Carlsbad Comp
San Antonio, TX 78217	Project #: 0210003
ATTN: Joseph W. Martinez	Print Date/Time: 03/09/11 17:30

Attached is our analytical report for the samples received for your project. Below is a list of your individual sample descriptions with our corresponding laboratory number. We also have enclosed a copy of the Chain of Custody that was received with your samples and a form documenting the condition of your samples upon arrival. Please note any unused portion of the samples may be discarded upon expiration of the EPA holding time for the analysis performed or after 30 days from the above report date, unless you have requested otherwise.

**ERMI** Environmental Laboratories certifies that all results contained in this report were produced in accordance with the requirements of the National Environmental Laboratory Accreditation Program (NELAP) unless otherwise noted. The results presented apply to the samples analyzed in accordance with the chain-of-custody document(s) furnished with the samples. This report is intended for the sole use of the customer for whom the work was performed and must be reproduced, without modification, in its entirety.

#### Sample Identification

Laboratory ID #	Client Sample_ID	<u>Matrix</u>	Sampled Date/Time	Received Date/Time
1103136-01	EC-1 (R)	Solid	02/24/11 09:35	03/04/11 13:38
1103136-02	EC-2 (R)	Solid	02/24/11 09:40	03/04/11 13:38



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### **Report of Sample Analysis**

Southwest Geoscience	Page:	Page	2 of 13
8829 Tradeway Street	Project: S. Carlsbad Comp		
San Antonio, TX 78217	Project #	: C	0210003
ATTN: Joseph W. Martinez	Print Dat	e/Time	e: 03/09/11 17:30

The analytical data and results contained in this report, as well as their supporting data, conform with Texas Risk Reduction Program (TRRP), 30 TAC, Section 350, requirements and are of sufficient and documented quality to meet both TRRP objectives, TCEQ regulatory guidance No. RG-366/TRRP-13 and the project-based objective of achieving the lowest method detection limit (i.e., the TRRP Critical PCL where reasonably achievable or, if not reasonably achievable, the MQL). All information concerning analytical parameters, methods and protocols that might bear upon or otherwise affect the accuracy of the analytical data in this report have been provided or otherwise disclosed herein. The data were obtained using applicable and appropriate EPA SW-846 or Texas Commission on Environmental Quality approved analytical protocols, methodologies and quality assurance/quality control standards. **ERMI Environmental Laboratories** certifies that its quality control program is substantially and materially consistent with the International Organization for Standardization "Guide 25: General Requirements the Competence of Calibration and Testing Laboratories (ISO 25 3rd Edition, 1990)," as amended or the quality standards outlined in the National Environmental Laboratory Accreditation Program, as amended. The entire analytical data package for this report, including the supporting quality control data, will be retained and maintained for at least five (5) years (or such longer period of time as may be required by TRRP) from the report date at the offices of **ERMI Environmental Laboratories, 400 W. Bethany, Suite 190, Allen, Texas 75013**.

I am responsible for the release of this laboratory data package. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Thank you for the opportunity to serve your environmental chemistry analysis needs. If you have any questions or concerns regarding this report please contact our Customer Service Department at the phone number below.

Respectfully submitted,

Sall K. Burun

Kendall K. Brown President

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# **Report of Sample Analysis**

Southwest Geoscience 8829 Tradeway Street San Antonio, TX 78217 ATTN: Joseph W. Martinez					Page: Page 3 of 13 Project: S. Carlsbad Comp Project #: 0210003 Print Date/Time: 03/09/11 17:30							
Laboratory ID #: 1103136-01 Sample Description EC-1 (R)	<u>Sample Type</u> Grab	Sample Type Grab			<u>Matrix</u> Solid <u>Sample Date/Time</u> 02/24/11 0935			Collected By Nitchell	Cus	tomer		
Analyte(s)	Result	SRL	MRL	Units	F*	Method	Batch	Analysis Date/Time	Anist	Flag		
Conventional Chemistr % Solids	y Parameters 83	0.20	0.2	%	1.00	SM 2540G	1C01024	03/01/11 1530	RA	Q-26		
Total Petroleum Hydrod TPH 1006 Prep Extraction	Carbon Fractions I Completed	Extraction N/A	N/A	N/A	1.00	TX-1005	1C07017	03/07/11 1130	PMS			
TPH (C6-C12)	781	14.5	12	mg/kg	1.00	TX-1005	1C07017	03/09/11 1247	PMS	Q-22, Q-34		
TPH (>C12-C28)	235	7.23	6	dry mg/kg dry	1.00	TX-1005	1C07017	03/09/11 1247	PMS	Q-21, Q-22		
TPH (>C28-C35)	ND	2.41	2	mg/kg	1.00	TX-1005	1C07017	03/09/11 1247	PMS	Q-21		
TPH (C6-C35)	1020	24.1	20	dry mg/kg drv	1.00	TX-1005	1C07017	03/09/11 1247	PMS	Q-21, Q-22		
Total Petroleum Hydrod TPH 1006 Fractionation Extraction	Completed	N/A	N/A	N/A	1.00	TX-1006	1C07026	03/07/11 1548	тк	naa		
Aliphatic C6	16.6	3.62	3	mg/kg	1.00	TX-1006	1C07026	03/08/11 1433	PMS	naa,C-01		
Aliphatic >C6-C8	60.8	4.82	4	dry mg/kg drv	1.00	TX-1006	1C07026	03/08/11 1433	PMS	naa		
Aliphatic >C8-C10	315	6.03	5	mg/kg	1.00	TX-1006	1C07026	03/08/11 1433	PMS	naa		
Aliphatic >C10-C12	157	12.1	10	mg/kg	1.00	TX-1006	1C07026	03/08/11 1433	PMS	naa		
Aliphatic >C12-C16	101	2.41	2	mg/kg	1.00	TX-1006	1C07026	03/08/11 1433	PMS	naa		
Aliphatic >C16-C21	28.7	2.41	2	mg/kg	1.00	TX-1006	1C07026	03/08/11 1433	PMS	naa		
Aliphatic >C21-C35	21.6	14.5	12	mg/kg	1.00	TX-1006	1C07026	03/08/11 1433	PMS	naa		
Total Aliphatic C6-C35	701	24.1	20	mg/kg	1.00	TX-1006	1C07026	03/08/11 1433	PMS	naa,Q-20, Q-22		
Aromatic >C7-C8	ND	3.62	3	mg/kg	1.00	TX-1006	1C07026	03/08/11 1743	PMS	naa		
Aromatic >C8-C10	49.4	12.1	10	mg/kg	1.00	TX-1006	1C07026	03/08/11 1743	PMS	naa		
Aromatic >C10-C12	16.8	12.1	10	mg/kg	1.00	TX-1006	1C07026	03/08/11 1743	PMS	naa		
Aromatic >C12-C16	10.5	2.41	2	mg/kg	1.00	TX-1006	1C07026	03/08/11 1743	PMS	naa		
Aromatic >C16-C21	ND	2.89	2.4	mg/kg	1.00	TX-1006	1C07026	03/08/11 1743	PMS	naa		

dry



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## **Report of Sample Analysis**

Southwest Geoscience 8829 Tradeway Street San Antonio, TX 78217 ATTN: Joseph W. Martinez				Page: Projec Projec Print D	Page t: S. t #: Date/Tim	e 4 of 13 Carlsbad 0210003 e: 0	Comp 3/09/11 17	7:30		
Laboratory ID #:Sample Type1103136-01GrabSample DescriptionEC-1 (R)			<u>Matrix</u> Solid <u>Sample Date/Time</u> 02/24/11 0935				Sample Collected By Customer B. Chris Mitchell			
Analyte(s)	Result	SRL	MRL	Units	F*	Method	Batch	Analysis Date/Time	Anist	Flag
Total Petroleum Hydro	ocarbon Fractions,	continued)	•							
Aromatic >C21-C35	ND	4.82	4	mg/kg dry	1.00	TX-1006	1C07026	03/08/11 1743	PMS	naa
Total Aromatic C7-C35	79.2	20.5	17	mg/kg	1.00	TX-1006	1C07026	03/08/11 1743	PMS	naa

dry



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### **Report of Sample Analysis**

Southwest Geo 8829 Tradeway San Antonio, T ATTN: Joseph			Page: Project Project Print D	Paga t: S. t #: pate/Tim	e 5 of 13 Carlsbad 0210003 e: 03	Comp 9/09/11 17	7:30			
Laboratory ID #: 1103136-02 Sample Description EC-2 (R)	<u>Sample Type</u> Grab		<u>Mat</u> Soli <u>San</u> 02/2	<u>rix</u> d n <u>ple Date/</u> 24/11 0940	<u>Fime</u>		<u>Sample C</u> B. Chris N	Collected By Nitchell	Cust	omer
Analyte(s)	Result	SRL	MRL	Units	F*	Method	Batch	Analysis Date/Time	Anist	Flag
<b>Conventional Chemistr</b> % Solids	y Parameters 70	0.20	0.2	%	1.00	SM 2540G	1C01024	03/01/11 1530	RA	
Total Petroleum Hydrod TPH 1006 Prep Extraction	carbon Fractions	Extraction N/A	N/A	N/A	1.00	TX-1005	1C07017	03/07/11 1130	PMS	
ГРН (С6-С12)	1050	17.0	12	mg/kg	1.00	TX-1005	1C07017	03/09/11 1323	PMS	
TPH (>C12-C28)	509	8.48	6	mg/kg	1.00	TX-1005	1C07017	03/09/11 1323	PMS	
ГРН (>C28-C35)	ND	2.83	2	mg/kg	1.00	TX-1005	1C07017	03/09/11 1323	PMS	
ГРН (С6-С35)	1560	28.3	20	mg/kg dry	1.00	TX-1005	1C07017	03/09/11 1323	PMS	
Total Petroleum Hydroc	arbon Fractions			ary						
PH 1006 Fractionation Extraction	Completed	N/A	N/A	N/A	1.00	TX-1006	1C07026	03/07/11 1548	тк	
Aliphatic C6	18.3	4.24	3	mg/kg drv	1.00	TX-1006	1C07026	03/08/11 1509	PMS	naa
Aliphatic >C6-C8	41.1	5.65	4	mg/kg	1.00	TX-1006	1C07026	03/08/11 1509	PMS	
Aliphatic >C8-C10	453	7.07	5	mg/kg	1.00	TX-1006	1C07026	03/08/11 1509	PMS	
Aliphatic >C10-C12	440	14.1	10	mg/kg	1.00	TX-1006	1C07026	03/08/11 1509	PMS	
Aliphatic >C12-C16	427	2.83	2	mg/kg	1.00	TX-1006	1C07026	03/08/11 1509	PMS	
Aliphatic >C16-C21	68.5	2.83	2	mg/kg	1.00	TX-1006	1C07026	03/08/11 1509	PMS	

dry Aliphatic >C21-C35 35.7 17.0 12 1.00 TX-1006 1C07026 03/08/11 1509 PMS mg/kg naa dry 1480 Total Aliphatic C6-C35 28.3 20 1.00 TX-1006 1C07026 03/08/11 1509 PMS naa mg/kg drv ND Aromatic >C7-C8 4.24 3 1.00 TX-1006 1C07026 03/08/11 1818 PMS naa mg/kg dry 38.2 Aromatic >C8-C10 10 1.00 TX-1006 1C07026 03/08/11 1818 PMS 14.1 naa mg/kg dry 20.7 Aromatic >C10-C12 10 1.00 TX-1006 1C07026 03/08/11 1818 PMS 14.1 mg/kg naa dry Aromatic >C12-C16 12.3 2.83 2 1.00 TX-1006 1C07026 03/08/11 1818 PMS naa mg/kg dry ND Aromatic >C16-C21 3.39 2.4 1.00 TX-1006 1C07026 03/08/11 1818 PMS naa mg/kg dry

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Southwest Geoscience 8829 Tradeway Street San Antonio, TX 78217 ATTN: Joseph W. Martinez				Page: Project Project Print D	Pag :: S. : #: ate/Tim	e 6 of 13 Carlsbad 0210003 ie: 03	Comp 5/09/11 17	7:30		
Laboratory ID #: 1103136-02 Sample Description EC-2 (R)	<u>Sample Type</u> Grab		<u>Ma</u> Sol <u>Sar</u> 02/	<u>trix</u> id nple Date/1 24/11 0940	<u>l'ime</u>		<u>Sample C</u> B. Chris M	Collected By litchell	Cus	tomer
Analyte(s)	Result	SRL	MRL	Units	F*	Method	Batch	Analysis Date/Time	Anist	Flag
Total Petroleum Hydro	ocarbon Fractions,	(continued)								
Aromatic >C21-C35	20.6	5.65	4	mg/kg dry	1.00	TX-1006	1C07026	03/08/11 1818	PMS	naa
Total Aromatic C7-C35	92.4	24.0	17	mg/kg dry	1.00	TX-1006	1C07026	03/08/11 1818	PMS	naa



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# **Report of Sample Analysis**

Southwest Geoscience 8829 Tradeway Street San Antonio, TX 78217 ATTN: Joseph W. Martinez Page: Page 7 of 13 Project: S. Carlsbad Comp Project #: 0210003 Print Date/Time: 03/09/11 17:30

### Conventional Chemistry Parameters - Quality Control

Analyte(s)	Result	*SRI	Units	Spike	Source Result	%REC %REC Limits	RPD	RPD Limit	Flag
Batch 1C01024						• •		-	-
Blank (1C01024-BLK1) Prepared & Analyzed: 03/01	/11 15:30	· · ·					<b>.</b>		
% Solids	ND	0.20	%						
Duplicate (1C01024-DUP1) Prepared & Analyzed: 03/01	/11 15:30			So	urce: 1102642	-01			
% Solids	76	0.20	%		83		9	4	Q-26
Duplicate (1C01024-DUP2) Prepared & Analyzed: 03/01	/11 15:30			So	urce: 1103136	-01			
% Solids	76	0.20	%		83		9	4	Q-26



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## **Report of Sample Analysis**

Southwest Geoscience	Page: Page 8 of 13
8829 Tradeway Street	Project: S. Carlsbad Comp
San Antonio, TX 78217	Project #: 0210003
ATTN: Joseph W. Martinez	Print Date/Time: 03/09/11 17:30

### Total Petroleum Hydrocarbon Fractions Extraction - Quality Control

Analyte(s)	Result	*SRL		Spike Level	Source		%REC Limits	RPD	RPD	Flag
Batch 1C07017-1006TX-Pre			•		-		_			•
Blank (1C07017-BLK1) Prepared & Analyzed: 03/07/1	1 11:30	<u> </u>								
TPH 1006 Prep Extraction	Completed	N/A	N/A							
TPH (C6-C12)	ND	11.9	mg/kg wet							
TPH (>C12-C28)	ND	5.97	mg/kg wet							
TPH (>C28-C35)	ND	1.99	mg/kg wet							
TPH (C6-C35)	ND	19.9	mg/kg wet							
Laboratory Control Sample (1 Prepared & Analyzed: 03/07/1	IC07017-BS1) 1 11:30								~	
TPH 1006 Prep Extraction	Completed	N/A	N/A				0-0			
TPH (C6-C12)	188	12.0	mg/kg wet	200		94	75-125			
TPH (>C12-C28)	87.2	6.01	mg/kg wet	100		87	75-125			
TPH (>C28-C35)	27.7	2.00	mg/kg wet	33.3		83	75-125			
TPH (C6-C35)	303	20.0	mg/kg wet	333		91	75-125			
Laboratory Control Sample D Prepared & Analyzed: 03/07/1	uplicate (1C07017- 1 11:30	BSD1)								
TPH 1006 Prep Extraction	Completed	N/A	N/A				0-0		0	
TPH (C6-C12)	174	12.0	mg/kg wet	200		87	75-125	8	17	
TPH (>C12-C28)	85.3	5.99	mg/kg wet	99.9		85	75-125	2	19	
TPH (>C28-C35)	26.2	2.00	mg/kg wet	33.2		79	75-125	6	18	
TPH (C6-C35)	286	20.0	mg/kg wet	332		86	75-125	6	20	
Matrix Spike (1C07017-MS1) Prepared & Analyzed: 03/07/1	1 11:30			s	ource: 1103136-	01				
TPH 1006 Prep Extraction	Completed	N/A	N/A		ND		0-0			
TPH (C6-C12)	869	14.4	mg/kg dry	240	781	37	75-125			Q-02
TPH (>C12-C28)	206	7.21	mg/kg dry	120	235	-25	75-125			Q-02
TPH (>C28-C35)	30.5	2.40	mg/kg dry	39.9	ND	76	75-125			
TPH (C6-C35)	1110	24.0	mg/kg dry	399	1020	22	75-125			Q-02



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### **Report of Sample Analysis**

Southwest Geoscience 8829 Tradeway Street San Antonio, TX 78217 ATTN: Joseph W. Martinez Page:Page 9 of 13Project:S. Carlsbad CompProject #:0210003Print Date/Time:03/09/11 17:30

#### Total Petroleum Hydrocarbon Fractions Extraction - Quality Control

Analyte(s)	Result	*SRI	Lunits I	Spike	Source	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 1C07017-1006TX-P	Prep (continued)									
Matrix Spike Duplicate (1C) Prepared & Analyzed: 03/07	07017-MSD1) 7/11 11:30			Sc	ource: 1103136	-01				
TPH 1006 Prep Extraction	Completed	N/A	N/A		ND		0-0		0	
TPH (C6-C12)	1170	14.5	mg/kg dry	241	781	162	75-125	30	20	Q-02, Q-04
TPH (>C12-C28)	307	7.24	mg/kg dry	121	235	59	75-125	40	20	Q-02, Q-04
TPH (>C28-C35)	26.3	2.41	mg/kg dry	40.1	ND	66	75-125	15	20	Q-02
TPH (C6-C35)	1500	24.1	mg/kg dry	401	1020	122	75-125	31	20	Q-04



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### **Report of Sample Analysis**

Southwest Geoscience 8829 Tradeway Street San Antonio, TX 78217 ATTN: Joseph W. Martinez Page:Page 10 of 13Project:S. Carlsbad CompProject #:0210003Print Date/Time:03/09/11 17:30

#### Total Petroleum Hydrocarbon Fractions - Quality Control

Analyte(s)	Result	*SRI		Spike	Source Result	%REC	%REC	RPD	RPD Limit	Flag
Batch 1C07026 - TNRCC 10	06		•						•.	•
Blank (1C07026-BLK1) Prepared & Analyzed: 03/07/11	1 15:48					-				
TPH 1006 Fractionation Extraction	Completed	N/A	N/A							
Aliphatic C6	11.9	2,99	mg/kg wet							C-01
Aliphatic >C6-C8	ND	3.98	mg/kg wet							
Aliphatic >C8-C10	ND	4.98	mg/kg wet							
Aliphatic >C10-C12	ND	9.95	mg/kg wet							
Aliphatic >C12-C16	ND	1.99	mg/kg wet							
Aliphatic >C16-C21	ND	1.99	mg/kg wet							
Aliphatic >C21-C35	ND	11.9	mg/kg wet							
Total Aliphatic C6-C35	ND	19.9	mg/kg wet							
Aromatic >C7-C8	ND	2.99	mg/kg wet							
Aromatic >C8-C10	ND	9.95	mg/kg wet							
Aromatic >C10-C12	ND	9.95	mg/kg wet							
Aromatic >C12-C16	ND	1.99	mg/kg wet							
Aromatic >C16-C21	ND	2.39	mg/kg wet							
Aromatic >C21-C35	ND	3.98	mg/kg wet							
Total Aromatic C7-C35	ND	16.9	mg/kg wet							
TPH (C6-C35)	ND	19.9	mg/kg wet							
Laboratory Control Sample (1 Prepared & Analyzed: 03/07/11	<b>C07026-BS1)</b> 1 15:48									
TPH 1006 Fractionation Extraction	Completed	N/A	N/A				0-0			
TPH (C6-C35)	285	20.0	mg/kg wet	333		86	60-140			
Laboratory Control Sample Du Prepared & Analyzed: 03/07/11	uplicate (1C07026- 1 15:48	BSD1)								
TPH 1006 Fractionation Extraction	Completed	N/A	N/A				0-0		0	
TPH (C6-C35)	278	20.0	mg/kg wet	332		84	60-140	3	20	



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## **Report of Sample Analysis**

Southwest Geoscience 8829 Tradeway Street San Antonio, TX 78217 ATTN: Joseph W. Martinez Page:Page 11 of 13Project:S. Carlsbad CompProject #:0210003Print Date/Time:03/09/11 17:30

### Total Petroleum Hydrocarbon Fractions - Quality Control

Analyte(s)	Result	*SRI		Spike Level	Source Result	% <u> _%REC</u>	REC	RPD	RPD	Flag
Batch 1C07026 - TNRCC 10	06 (continued)									
Matrix Spike (1C07026-MS1) Prenared & Analyzed: 03/07/11	1 15:48			So	urce: 1103136	-01				
TPH 1006 Fractionation Extraction	Completed	N/A	N/A		ND		0-0			
ТРН (С6-С35)	1280	24.0	mg/kg dry	399	780	125	60-140			
Matrix Spike Duplicate (1C070 Prepared & Analyzed: 03/07/11	<b>26-MSD1)</b> 1 15:48	<u>_</u>		So	urce: 1103136	-01				
TPH 1006 Fractionation Extraction	Completed	N/A	N/A		ND		0-0		0	
TPH (C6-C35)	1640	24.1	mg/kg dry	401	780	213	60-140	25	20	Q-02, Q-04

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## **Report of Sample Analysis**

Southwest Geoscience	Page:	Page 12 of	13	
8829 Tradeway Street	y Street Project: S. C			
San Antonio, TX 78217	Project #:	021000	13	
ATTN: Joseph W. Martinez	Print Date	/Time:	03/09/11 17:30	

#### **Notes and Definitions**

The results presented in this report were generated using those methods given in 40 CFR Part 136 for Water and Wastewater samples and in SW-846 for RCRA/Solid Waste samples.

The elevated levels in the C6 range are possibly due to trace levels of hexane in the laboratory air.
The recovery of this analyte in the MS was outside the acceptable range due to interference, large dilutions required for analysis or a combination of these factors. The recovery of this analyte in the LCS(s) was within the acceptable range.
The RPD of this analyte between the MS(s) was outside of the acceptable range. The RPD of this same analyte between the LCS(s) was within the acceptable range.
The recovery of this analyte in the MS was higher than the acceptable range. This indicates a high bias to the result presented.
The recovery of this analyte in the MS was lower than the acceptable range. This indicates a low bias to the result presented.
The RPD between the MS(s) sample analyses was outside the acceptable range. This indicates the result was not as precise as expected.
The RPD between duplicate analyses was outside of the acceptable range. This indicates the result was not as precise as expected.
The accuracy of this analysis as indicated by matrix spike recovery is inconclusive since both high and low recoveries were observed. No statement in regard to bias can be made.
Analyte NOT DETECTED at or above the reporting limit
Sample results reported on a dry weight basis
Laboratory Control Sample/Laboratory Control Sample Duplicate
Matrix Spike/Matrix Spike Duplicate
Relative Percent Difference
milligrams per kilogram
milligrams per liter
micrograms per kilogram
micrograms per liter
Not covered under scope of NELAP accreditation.
Calculated factor rounded to 3 significant figures. Concentration factor when <1.00 and dilution factor when <1.00.
Analyst Initials
Sample Reporting Limit
Method Reporting Limit



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## **Report of Sample Analysis**

Southwest GeosciencePage:Page 13 of 138829 Tradeway StreetProject:S. Carlsbad CompSan Antonio, TX 78217Project #:0210003ATTN: Joseph W. MartinezPrint Date/Time:03/09/11 17:30

naa

This analysis/parameter is not accreditable under the current NELAP program

Customer	Service
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1103136

From: Joseph Martinez [Joseph.Martinez@southwestgeoscience.com]

Sent: Friday, March 04, 2011 1:38 PM

To: 'ERMI Environmental Services'

Subject: RE: Rush Report: S. Carlsbad Comp - 1102642

Sorry, please use 100% turnaround time.

Thanks.

er en en en en internet

Joseph

From: ERMI Environmental Services [mailto:custserv@ermilab.com] Sent: Friday, March 04, 2011 1:37 PM To: 'Joseph Martinez' Subject: RE: Rush Report: S. Carlsbad Comp - 1102642

Joseph,

We will process this under a normal TAT unless you need results faster.

Leslie Underwood **Customer Service ERMI** Environmental Laboratories Phone: (972) 727-1123 Fax: (972) 727-1175 E-Mail: custserv@ermilab.com Celebrating 27 Years Serving You/

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36-01

From: Joseph Martinez [mailto:Joseph.Martinez@southwestgeoscience.com] Sent: Friday, March 04, 2011 1:34 PM To: 'ERMI Environmental Services' Subject: RE: Rush Report: S. Carlsbad Comp - 1102642

Leslie,

Please run TPH TX1006 on the soil samples EC-1(R) and EC-2(R) for this job. R) TU. 1103136.02 /w

Thanks,

Joseph

From: ERMI Environmental Services [mailto:custserv@ermilab.com]

Sent: Wednesday, March 02, 2011 5:30 PM To: Joseph Martinez Subject: Rush Report: S. Carlsbad Comp - 1102642

Attached are your results. We appreciate your business.

Our goal is to provide 100% customer satisfaction. Please click on the link and let us know how we performed for you, <u>Customer Satisfaction Survey</u>.

Page 2 of 2

CONTRACTOR OF

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Leslie Underwood Customer Service **ERMI** Environmental Laboratories Phone: (972) 727-1123 Fax: (972) 727-1175 E-Mail: <u>custserv@ermilab.com</u> **Celebrating 27 Years Serving You!** 

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### **Report of Sample Analysis**

Southwest Geoscience	Page: Page 1 of 21					
8829 Tradeway Street	Project: S. Carlsbad Comp					
San Antonio, TX 78217	Project #: 0210003					
ATTN: Joseph W. Martinez	Print Date/Time: 03/21/11 16:23					

Attached is our analytical report for the samples received for your project. Below is a list of your individual sample descriptions with our corresponding laboratory number. We also have enclosed a copy of the Chain of Custody that was received with your samples and a form documenting the condition of your samples upon arrival. Please note any unused portion of the samples may be discarded upon expiration of the EPA holding time for the analysis performed or after 30 days from the above report date, unless you have requested otherwise.

**ERMI** Environmental Laboratories certifies that all results contained in this report were produced in accordance with the requirements of the National Environmental Laboratory Accreditation Program (NELAP) unless otherwise noted. The results presented apply to the samples analyzed in accordance with the chain-of-custody document(s) furnished with the samples. This report is intended for the sole use of the customer for whom the work was performed and must be reproduced, without modification, in its entirety.

Laboratory ID #	Client Sample ID	Matrix	Sampled Date/Time	Received Date/Time
1103275-01	B-3 (6-7)	Solid	02/25/11 08:45	03/09/11 14:46
1103275-02	B-4 (3-4)	Solid	02/25/11 08:55	03/09/11 14:46
1103275-03	B-4 (5-6)	Solid	02/25/11 09:00	03/09/11 14:46
1103275-04	B-5 (4-5)	Solid	02/25/11 09:10	03/09/11 14:46
1103275-05	B-6 (4-5)	Solid	02/25/11 09:25	03/09/11 14:46
1103275-06	B-6 (7-8)	Solid	02/25/11 09:30	03/09/11 14:46
1103275-07	B-7 (2-3)	Solid	02/25/11 09:35	03/09/11 14:46
1103275-08	B-7 (5-6)	Solid	02/25/11 09:40	03/09/11 14:46
1103275-09	B-8 (4-5)	Solid	02/25/11 10:10	03/09/11 14:46
1103275-10	B-8 (7-8)	Solid	02/25/11 10:15	03/09/11 14:46
1103275-11	B-9 (4-5)	Solid	02/25/11 10:25	03/09/11 14:46
1103275-12	B-9 (7-8)	Solid	02/25/11 10:30	03/09/11 14:46

#### Sample Identification



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### **Report of Sample Analysis**

Southwest Geoscience	Page: Page 2 of 2	21
8829 Tradeway Street	Project: S. Carls	bad Comp
San Antonio, TX 78217	Project #: 02100	03
ATTN: Joseph W. Martinez	Print Date/Time:	03/21/11 16:23

The analytical data and results contained in this report, as well as their supporting data, conform with Texas Risk Reduction Program (TRRP), 30 TAC, Section 350, requirements and are of sufficient and documented quality to meet both TRRP objectives, TCEQ regulatory guidance No. RG-366/TRRP-13 and the project-based objective of achieving the lowest method detection limit (i.e., the TRRP Critical PCL where reasonably achievable or, if not reasonably achievable, the MQL). All information concerning analytical parameters, methods and protocols that might bear upon or otherwise affect the accuracy of the analytical data in this report have been provided or otherwise disclosed herein. The data were obtained using applicable and appropriate EPA SW-846 or Texas Commission on Environmental Quality approved analytical protocols, methodologies and quality assurance/quality control standards. **ERMI Environmental Laboratories** certifies that its quality control program is substantially and materially consistent with the International Organization for Standardization "Guide 25: General Requirements the Competence of Calibration and Testing Laboratories (ISO 25 3rd Edition, 1990)," as amended or the quality standards outlined in the National Environmental Laboratory Accreditation Program, as amended. The entire analytical data package for this report, including the supporting quality control data, will be retained and maintained for at least five (5) years (or such longer period of time as may be required by TRRP) from the report date at the offices of **ERMI Environmental Laboratories, 400 W. Bethany, Suite 190, Allen, Texas 75013.** 

I am responsible for the release of this laboratory data package. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Thank you for the opportunity to serve your environmental chemistry analysis needs. If you have any questions or concerns regarding this report please contact our Customer Service Department at the phone number below.

Respectfully submitted,

alall K. Brown

Kendall K. Brown President

Std Rpt v.2.7-072610



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# **Report of Sample Analysis**

Southwest Ge	eoscience			Page:	Pag	e 3 of 21				
8829 Tradewa	ay Street			Projec	t: S	Carlsbad	Comp			
San Antonio,	TX 78217			Projec	t #:	0210003				
ATTN: Josepl	h W. Martinez			Print D	ate/Tim	ie: 03	/21/11 10	3:23		
Laboratory ID #: 1103275-01	<u>Sample Type</u> Grab		<u>Mat</u> Soli	trix id			Sample ( B. Chris N	Collected	By Cus	tomer
Sample Description B-3 (6-7)			<u>San</u> 02/2	nple Date/ 25/11 0845	<u>Time</u>					
Analyte(s)	Result	SRL	MRL	Units	F*	Method	Batch	Analysi Date/Tin	s ne Anlst	Flag
Total Petroleum Hydro	ocarbons - DRO		•							R-01
Ultrasonic Extraction	Completed	N/A	N/A	N/A	1.00	EPA 3550B	1C11002	03/11/11 0/	808 BMW	
TPH Diesel	4830	421	3	mg/kg dry	100.00	EPA 8015B mod	1C11002	03/21/11 12	226 PMS	Q-21
Surrogate			R	lesult	:	Spike Conc.	Rec	overy F	lec. Limits	
a-Pinene (EPA 8015B mo	od)		35.1	mg/kg dry	4.	37 mg/kg dry	8	03 %	10-112	Q-29
Triacontane (EPA 8015B mod)		ND n	ng/kg dry	4.	01 mg/kg dry			10-140	Q-30	
Total Petroleum Hydro	ocarbons - GRO									R-01
TPH Gasoline	2070	140	0.05	mg/kg dry	2,000.00	EPA 8015B mod	1C10010	03/11/11 10	050 TA	
Surrogate			R	lesult	9	Spike Conc.	Rec	overy R	ec. Limits	
4-Bromofluorobenzene (E	EPA 8015B mod)		0.0985	i mg/kg dry	0.0	701 mg/kg dr	y 1.	40 %	55-140	
BTEX										
Benzene	9.10	1.41	1	ug/kg dry	1.00	EPA 8021B	1C10010	03/11/11 0	158 TA	Q-13
Ethyl Benzene	13100	2810	1	ug/kg dry	2,000.00	EPA 8021B	1C10010	03/11/11 10	050 TA	R-01
Toluene	56800	2810	1	ug/kg dry	2,000.00	EPA 8021B	1C10010	03/11/11 10	050 TA	R-01
Xylenes (total)	224000	8420	3	ug/kg dry	2,000.00	EPA 8021B	1C10010	03/11/11 10	050 TA	R-01
Surrogate			R	lesult	;	Spike Conc.	Rec	overy R	ec. Limits	
4-Bromofluorobenzene (E	EPA 8021B)		11.0	ug/kg dry	7	0.3 ug/kg dry	1	6%	10-140	
4-Bromofluorobenzene (E	EPA 8021B)		54.3	ug/kg dry	7	0.1 ug/kg dry	7	7%	10-140	
<b>Conventional Chemist</b>	try Parameters									
% Solids	71	0.20	0.2	%	1.00	SM 2540G	1C10028	03/10/11 18	315 KTF	S-14



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## **Report of Sample Analysis**

Southwest Ge	Page: Page 4 of 21									
8829 Tradewa	ay Street			Project		S. Carlsbad C	omp			
San Antonio,	TX 78217			Project	#:	0210003				
ATTN: Joseph	ATTN: Joseph W. Martinez			Print Da	ate/Ti	ime: 03/2	21/11 16	6:23		
Laboratory ID #: 1103275-02	<u>Sample Type</u> Grab		<u>Mat</u> Soli	t <u>rix</u> id		 	Sample ( B. Chris M	Collected E	<u>By</u> Cus	tomer
Sample Description B-4 (3-4)			<u>Sar</u> 02/2	nple Date/T 25/11 0855	ime					
Analyte(s)	Result	SRL	MRL	Units	F*	Method	Batch	Analysis Date/Tim	e Anist	Flag
Total Petroleum Hydro	ocarbons - DRO		•							
Ultrasonic Extraction	Completed	N/A	N/A	N/A	1.00	EPA 3550B	1C11002	03/11/11 08	08 BMW	
TPH Diesel	4.17	3.97	3	mg/kg dry	1.00	EPA 8015B mod	1C11002	03/18/11 17	37 PMS	C-01
Surrogate			F	lesult		Spike Conc.	Reco	overy Re	ec. Limits	
a-Pinene (EPA 8015B mo	od)		1.96	mg/kg dry		4.12 mg/kg dry	4	8 %	10-112	
Triacontane (EPA 8015B	mod)		2.77	mg/kg dry		3.78 mg/kg dry	7	3 %	10-140	
Total Petroleum Hydro	ocarbons - GRO									
TPH Gasoline	ND	0.0657	0.05	mg/kg dry	0.99	EPA 8015B mod	1C10010	03/10/11 23	20 TA	
Surrogate			R	lesult		Spike Conc.	Reco	overy Re	ec. Limits	
4-Bromofluorobenzene (E	EPA 8015B mod)		0.0640	) mg/kg dry	C	0.0657 mg/kg dry	9	7%	55-140	
BTEX										
Benzene	ND	1.31	1	ug/kg dry	0.99	EPA 8021B	1C10010	03/10/11 23	20 TA	
Ethyl Benzene	ND	1.31	1	ug/kg dry	0.99	EPA 8021B	1C10010	03/10/11 23	20 TA	
Toluene	ND	1.31	1	ug/kg dry	0.99	EPA 8021B	1C10010	03/10/11 23	20 TA	
Xylenes (total)	ND	3.94	3	ug/kg dry	0.99	EPA 8021B	1C10010	03/10/11 232	20 TA	
Surrogate			R	esult .		Spike Conc.	Reco	overy Re	c. Limits	
4-Bromofluorobenzene (E	PA 8021B)		64.6	ug/kg dry		65.7 ug/kg dry	9	8 %	10-140	
<b>Conventional Chemist</b>	ry Parameters									
% Solids	76	0.20	0.2	%	1.00	SM 2540G	1C10028	03/10/11 18	15 KTF	S-14

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Southwest 0 8829 Tradev	Southwest GeosciencePage:8829 Tradeway StreetProject:					Page 5 of 21 S. Carlsbad Comp					
San Antonio	o, TX 78217			Project	oject #: 0210003						
ATTN: Jose	ph W. Martinez			Print D	ate/Tir	ne: 03/	21/11 10	5:23			
Laboratory ID #: 1103275-03 Sample Description B-4 (5-6)	<u>Sample Type</u> Grab		<u>Mat</u> Soli San	<u>trix</u> id nple Date/1	<u>[ime</u>		– <u>Sample (</u> B. Chris M	Collected By Nitchell	Cus	stomer	
			02/2	25/11 0900							
Analyte(s)	Result	SRL	MRL	Units	F*	Method	Batch	Analysis Date/Time	Anist	Flag	
Total Petroleum Hyd	Irocarbons - DRO			•					• — •	R-01	
Ultrasonic Extraction	Completed	N/A	N/A	N/A	1.00	EPA 3550B	1C11002	03/11/11 0808	BMW		
TPH Diesel	368	40.0	3	mg/kg dry	10.00	EPA 8015B mod	1C11002	03/21/11 1253	PMS		
Surrogate			R	lesult		Spike Conc.	Rec	overy Rec	. Limits		
a-Pinene (EPA 8015B r	a-Pinene (EPA 8015B mod)			mg/kg dry	4	4.15 mg/kg dry	2	2%	10-112		
Triacontane (EPA 8015	iB mod)		3.69	mg/kg dry	3	3.81 mg/kg dry	9	7%	10-140		
Total Petroleum Hyd	rocarbons - GRO										
TPH Gasoline	3.75	0.0664	0.05	mg/kg dry	1.00	EPA 8015B mod	1C10010	03/11/11 0039	ТА		
Surrogate			R	lesult		Spike Conc.	Recovery Rec. Limits				
4-Bromofluorobenzene	(EPA 8015B mod)		0.233	mg/kg dry	<b>0</b> .	0664 mg/kg dry	3	51 % క	5-140	Q-29	
BTEX											
Benzene	ND	1.33	1	ug/kg dry	1.00	EPA 8021B	1C10010	03/11/11 0039	ТА		
Ethyl Benzene	ND	1.33	1	ug/kg dry	1.00	EPA 8021B	1C10010	03/11/11 0039	ТА		
Toluene	3.16	1.33	1	ug/kg dry	1.00	EPA 8021B	1C10010	03/11/11 0039	ТА		
Xylenes (total)	19.8	3.98	3	ug/kg dry	1.00	EPA 8021B	1C10010	03/11/11 0039	TA		
Surrogate			R	lesult		Spike Conc.	Reco	overy Rec	Limits		
4-Bromofluorobenzene	(EPA 8021B)		88.9	ug/kg dry	(	66.4 ug/kg dry	1:	34 % 1	0-140		
Conventional Chemi	stry Parameters										
% Solids	75	0.20	0.2	%	1.00	SM 2540G	1C10028	03/10/11 1815	KTF	S-14	



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## **Report of Sample Analysis**

Southwest Geoscience 8829 Tradeway Street San Antonio, TX 78217 ATTN: Joseph W. Martinez			Page: Page 6 of 21 Project: S. Carlsbad Comp Project #: 0210003 Print Date/Time: 03/21/11 16:23																				
													Laboratory ID #: 1103275-04	<u>Matrix</u> Solid					Sample Collected By Cust B. Chris Mitchell				omer
													Sample Description B-5 (4-5)		<u>Sample Date/Time</u> 02/25/11 0910								
Analyte(s)	Result	SRL	MRL	Units	F*	Method	Batch	Anal Date/1	/sis 'ime	Anist	Flag												
Total Petroleum Hydro	ocarbons - DRO		•				-				R-01												
Ultrasonic Extraction	Completed	N/A	N/A	N/A	1.00	EPA 3550B	1C11002	03/11/1	0808	BMW													
TPH Diesel	2520	378	3	mg/kg dry	100.00	EPA 8015B mod	1C11002	03/19/1	1 0457	PMS													
Surrogate	Surrogate			Result		Spike Conc.		Recovery		Limits													
a-Pinene (EPA 8015B mod)		32.4 mg/kg dry		3.93 mg/kg dry		824 %		10-112		Q-29													
Triacontane (EPA 8015B mod)		ND mg/kg dry		3.60 mg/kg dry				1	0-140	Q-30													
Total Petroleum Hydro	ocarbons - GRO										R-01												
TPH Gasoline	1540	63.1	0.05	mg/kg dry	1,000.00	EPA 8015B mod	1C10010	03/11/11	1116	ТА													
Surrogate			R	Result		Spike Conc.		Recovery		Limits													
4-Bromofluorobenzene (EPA 8015B mod)			0.10 <b>9</b>	mg/kg dry	0.0631 mg/kg dry		174 %		55-140		Q-29												
BTEX																							
Benzene	ND	1.25	1	ug/kg dry	0.99	EPA 8021B	1C10010	03/11/17	0343	TA	Q-01												
Ethyl Benzene	9.91	1.25	1 .	ug/kg dry	0.99	EPA 8021B	1C10010	03/11/11	0343	TA	Q-13												
Toluene	7620	1260	1	ug/kg dry	1,000.00	EPA 8021B	1C10010	03/11/11	1116	ТА	R-01												
Xylenes (total)	29400	3780	3	ug/kg dry	1,000.00	EPA 8021B	1C10010	03/11/11	1116	TA	R-01												
Surrogate			Result		Spike Conc.		Recovery		Rec. Limits														
4-Bromofluorobenzene (EPA 8021B)		7.52 ug/kg dry		62.7 ug/kg dry		12 %		10-140															
4-Bromofluorobenzene (EPA 8021B)		65.6 ug/kg dry		63.1 ug/kg dry		104 %		10-140															
<b>Conventional Chemist</b>	ry Parameters																						
% Solids	79	0.20	0.2	%	1.00	SM 2540G	1C10028	03/10/11	1815	KTF	S-14												

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Louisiana: 02007 Kansas: E-10388 Texas: T104704232-10-1

Southwest Geoscience 8829 Tradeway Street San Antonio, TX 78217				Page:	Pag	je 7 of 21	_					
				Project: S. Carlsbad Comp								
				Project	#:	0210003						
ATTN: Josepl	h W. Martinez			Print D	ate/Tin	ne: 03	/21/11 10	5:23				
Laboratory ID #: 1103275-05	<u>Sample Type</u> Grab	<u>Mat</u> Soli	<u>rix</u> d			Sample ( B. Chris M	Collected I	<u>By</u> Cus	Customer			
Sample Description B-6 (4-5)			<u>Sar</u> 02/2	nple Date/1 25/11 0925	<u>ime</u>							
Analyte(s)	Result	SRL	MRL	Units	F*	Method	Batch	Analysis Date/Tim	s e Anist	Flag		
Total Petroleum Hydro	ocarbons - DRO			•								
Ultrasonic Extraction	Completed	N/A	N/A	N/A	1.00	EPA 3550B	1C11002	03/11/11 08	08 BMW			
TPH Diesel	25.5	3.67	3	mg/kg dry	1.00	EPA 8015B mod	1C11002	03/18/11 19	00 PMS	C-01		
Surrogate			F	lesult		Spike Conc.	Rec	overy R	ec. Limits			
a-Pinene (EPA 8015B mod)			2.59	mg/kg dry	3.81 mg/kg dry		68 %		10-112			
Triacontane (EPA 8015B mod)			3.41 mg/kg dry		3.50 mg/kg dry		97 %		10-140			
Total Petroleum Hydro	ocarbons - GRO									R-01		
TPH Gasoline	1.12	0.278	0.05	mg/kg dry	4.55	EPA 8015B mod	1C10010	03/11/11 12	45 TA			
Surrogate			R	lesult		Spike Conc.	Rec	overy R	ec. Limits			
4-Bromofluorobenzene (E	EPA 8015B mod)		0.365	mg/kg dry	0.278 mg/kg dry		/ 131 %		55-140			
BTEX												
Benzene	ND	1.22	1	ug/kg dry	1.00	EPA 8021B	1C10010	03/11/11 01	05 TA			
Ethyl Benzene	ND	1.22	1	ug/kg dry	1.00	EPA 8021B	1C10010	03/11/11 01	05 TA			
Toluene	8.47	1.22	1	ug/kg dry	1.00	EPA 8021B	1C10010	03/11/11 01	05 TA			
Xylenes (total)	14.7	3.67	3	ug/kg dry	1.00	EPA 8021B	1C10010	03/11/11 01	05 TA			
Surrogate		Result			Spike Conc.	Recovery Re		ec. Limits				
4-Bromofluorobenzene (EPA 8021B)			36.1 ug/kg dry		61.2 ug/kg dry		59 %		10-140			
<b>Conventional Chemist</b>	try Parameters											
% Solids	82	0.20	0.2	%	1.00	SM 2540G	1C10028	03/10/11 18	15 KTF	S-14		



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Louisiana: 02007 Kansas: E-10388 Texas: T104704232-10-1

Southwest Geoscience 8829 Tradeway Street			·	Page:	Page	e 8 of 21							
			Project: S. Carlsbad Comp										
San Antonio, TX 78217 ATTN: Joseph W. Martinez				Project #: 0210003									
				Print Date/Time: 03/21/11 16:23									
Laboratory ID #: 1103275-06	<u>Sample Type</u> Grab	<u>Matrix</u> Solid					Sample ( B. Chris N	Customer					
Sample Description B-6 (7-8)			<u>San</u> 02/2	nple Date/ 25/11 0930	<u>Time</u> )								
Analyte(s)	Result	SRL	MRL	Units	F*	Method	Batch	Analysi Date/Tin	s ne Anl	st Flag			
Total Petroleum Hydro	ocarbons - DRO								• •	R-01			
Ultrasonic Extraction	Completed	N/A	N/A	N/A	1.00	EPA 3550B	1C11002	03/11/11 0	808 BM	W			
TPH Diesel	2210	383	3	mg/kg dry	100.00	EPA 8015B mod	1C11002	03/19/11 0	553 PN	S			
Surrogate					Spike Conc.		Recovery		lec. Limit	s			
a-Pinene (EPA 8015B mod)		33.5	33.5 mg/kg dry		3.98 mg/kg dry		43 %	10-112	Q-29				
Triacontane (EPA 8015B mod)		ND mg/kg dry		3.65 mg/kg dry				10-140	Q-30				
Total Petroleum Hydro	ocarbons - GRO									R-01			
TPH Gasoline	1930	128	0.05	mg/kg dry	2,000.00	EPA 8015B mod	1C10010	03/11/11 1	143 T/	A			
Surrogate			R	Result		Spike Conc.		Recovery Rec		S			
4-Bromofluorobenzene (EPA 8015B mod)		Ó.0972	0.0972 mg/kg dry		0.0639 mg/kg dry		52 %	55-140	Q-29				
BTEX													
Benzene	ND	1.28	1	ug/kg dry	<sup>-</sup> 1.01	EPA 8021B	1C10010	03/11/11 0	501 T <i>i</i>	A Q-01			
Ethyl Benzene	4150	2550	1	ug/kg dry	2,000.00	EPA 8021B	1C10010	03/11/11 1	143 T <i>i</i>	A R-01			
Toluene	7170	2550	1	ug/kg dry	2,000.00	EPA 8021B	1C10010	03/11/11 1	143 TA	R-01			
Xylenes (total)	46300	7660	3	ug/kg dry	2,000.00	EPA 8021B	1C10010	03/11/11 11	143 T/	A R-01			
Surrogate		Result		Spike Conc.		Recovery F		lec. Limil	s				
4-Bromofluorobenzene (EPA 8021B)			10.4	10.4 ug/kg dry		64.2 ug/kg dry		16 %					
4-Bromofluorobenzene (EPA 8021B)			65.8	ug/kg dry	63	3.9 ug/kg dry	1	03 %	10-140				
<b>Conventional Chemist</b>	try Parameters												
% Solids	78	0.20	0.2	%	1.00	SM 2540G	1C10028	03/10/11 18	315 KT	F S-14			



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Louisiana: 02007 Kansas: E-10388 Texas: T104704232-10-1

Southwest Geoscience				Page: Page 9 of 21 Project: S. Carlshad Comp									
San Antonio		Project	. с 	0210002	omp								
ATTN: Josen		Project Print D	#. ato/Tin	0210003	21/11 16	3.23							
			_				<u> </u>						
<u>Laboratory ID #:</u> 1103275-07	<u>Sample Type</u> Grab	<u>Matrix</u> Solid						Sample Collected By B. Chris Mitchell			Customer		
Sample Description B-7 (2-3)			<u>Sar</u> 02/:	<u>mple_Date/T</u> 25/11 0935	ïme								
Analyte(s)	Result	SRL	MRL	Units	F*	Method	Batch	Analy Date/T	sis ime	Anist	Flag		
Total Petroleum Hydr	ocarbons - DRO	,		•		-	· · · · · ·			_			
Ultrasonic Extraction	Completed	N/A	N/A	N/A	1.00	EPA 3550B	1C11002	03/11/11	8080	BMW			
TPH Diesel	7.98	3.66	3	mg/kg dry	1.00	EPA 8015B mod	1C11002	03/19/11	0334	PMS	C-01		
Surrogate			F	Result		Spike Conc.	Reco	overy	Rec.	Limits			
a-Pinene (EPA 8015B mod)		1.65 mg/kg dry		3.80 mg/kg dry		43 %		10-112					
Triacontane (EPA 8015B mod)			2.68 mg/kg dry 3.48 mg/kg dr		3.48 mg/kg dry	77 % 1		10	-140				
Total Petroleum Hydro	ocarbons - GRO												
TPH Gasoline	ND	0.0612	0.05	mg/kg dry	1.00	EPA 8015B mod	1C10010	03/11/11	1439	ZT			
Surrogate	urrogate		F	Result		Spike Conc.		Recovery		Limits			
4-Bromofluorobenzene (B	EPA 8015B mod)		0.0803	3 mg/kg dry	0.	0612 mg/kg dry	/ 131 %		55-140				
BTEX													
Benzene	ND	1.22	1	ug/kg dry	1.00	EPA 8021B	1C10010	03/11/11	1439	ZT			
Ethyl Benzene	ND	1.22	1	ug/kg dry	1.00	EPA 8021B	1C10010	03/11/11	1439	ZT			
Toluene	ND	1.22	1	ug/kg dry	1.00	EPA 8021B	1C10010	03/11/11	1439	ZT			
Xylenes (total)	ND	3.66	3	ug/kg dry	1.00	EPA 8021B	1C10010	03/11/11	1439	ZT			
Surrogate			Result		Spike Conc.		Recovery		Rec. Limits				
4-Bromofluorobenzene (EPA 8021B)		71.6	ug/kg dry	ć	61.0 ug/kg dry	11	17 %	10	-140				
<b>Conventional Chemis</b>	try Parameters												
% Solids	82	0.20	0.2	%	1.00	SM 2540G	1C10028	03/10/11	1815	KTF	S-14		


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Louisiana: 02007 Kansas: E-10388 Texas: T104704232-10-1

# **Report of Sample Analysis**

Southwest Ge		Page: Page 10 of 21 Project: S. Carlshad Comp									
Son Antonio				Projec	ι. ο. 		omp				
San Antonio,				Projec	t#:	0210003					
AT IN: Josepr	n vv. iviartinez			Print D	Date/ ( im	e: 03/	21/11.10	5.23			
Laboratory ID #: 1103275-08	<u>Sample Type</u> Grab		<u>Ma</u> Sol	trix id	- <u></u> -	3	<u>Sample (</u> B. Chris M	<u>ollectec</u> litchell	<u>I By</u>	Cust	omer
Sample Description B-7 (5-6)			<u>Sar</u> 02/2	<u>nple Date/</u> 25/11 0940	<u>Time</u> )						
Analyte(s)	Result	SRL	MRL	Units	F*	Method	Batch	Analys Date/Ti	sis me	Anist	Flag
Total Petroleum Hydro	ocarbons - DRO		•		_						R-01
Ultrasonic Extraction	Completed	N/A	N/A	N/A	1.00	EPA 3550B	1C11002	03/11/11	0808	BMW	
TPH Diesel	1480	362	3	mg/kg dry	100.00	EPA 8015B mod	1C11002	03/19/11	0648	PMS	
Surrogate			F	Result	5	Spike Conc.	Reco	overy	Rec. L	imits	
a-Pinene (EPA 8015B mo	od)		ND r	ng/kg dry	3.	76 mg/kg dry			10-	-112	Q-30
Triacontane (EPA 8015B	mod)		ND r	ng/kg dry	3.	45 mg/kg dry			10-	-140	Q-30
Total Petroleum Hydro	ocarbons - GRO										R-01
TPH Gasoline	960	60.4	0.05	mg/kg dry	1,000.00	EPA 8015B mod	1C10010	03/11/11	1209	ТА	
Surrogate			R	lesult	s	pike Conc.	Reco	overy	Rec. L	imits.	
4-Bromofluorobenzene (E	PA 8015B mod)		0.101	mg/kg dry	0.0	604 mg/kg dry	16	68 %	55-	-140	Q-29
BTEX											
Benzene	ND	1.20	1	ug/kg dry	0.99	EPA 8021B	1C10010	03/11/11	0620	ТА	Q-01
Ethyl Benzene	2280	121	1	ug/kg dry	100.00	EPA 8021B	1C10010	03/11/11	0712	TA	R-01
Toluene	2230	121	1	ug/kg dry	100.00	EPA 8021B	1C10010	03/11/11	0712	TA	<b>R</b> -01
Xylenes (total)	10500	362	3	ug/kg dry	100.00	EPA 8021B	1C10010	03/11/11	0712	ТА	<b>R</b> -01
Surrogate			R	lesult	S	pike Conc.	Reco	overy	Rec. L	imits.	
4-Bromofluorobenzene (E	PA 8021B)		33.7	ug/kg dry	60	).0 ug/kg dry	5	6 %	10-	-140	
4-Bromofluorobenzene (E	PA 8021B)		68.0	ug/kg dry	60	).4 ug/kg dry	11	13 %	10-	-140	
<b>Conventional Chemist</b>	ry Parameters										
% Solids	83	0.20	0.2	%	1.00	SM 2540G	1C10028	03/10/11	1815	KTF	S-14



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Louisiana: 02007 Kansas: E-10388 Texas: T104704232-10-1

# **Report of Sample Analysis**

Southwest Ge	eoscience			Page:	Pag	e 11 of 21				
8829 Tradewa	ay Street			Projec	t: S.	Carlsbad (	Comp			
San Antonio,	TX 78217			Projec	t #:	0210003				
ATTN: Joseph	h W. Martinez			Print D	ate/Tim	ie: 03/	/21/11 10	6:23		
Laboratory ID #: 1103275-09	<u>Sample Type</u> Grab		<u>Mat</u> Soli	<u>rix</u> id		·	Sample ( B. Chris N	Collected Nitchell	By C	Customer
Sample Description B-8 (4-5)			<u>San</u> 02/2	nple Date/ 25/11 1010	<u>Time</u> )					
Analyte(s)	Result	SRL	MRL	Units	F*	Method	Batch	Analysi Date/Tin	is ne Anls	t Flag
Total Petroleum Hydro	ocarbons - DRO		•	•	_					R-01
Ultrasonic Extraction	Completed	N/A	N/A	N/A	1.00	EPA 3550B	1C11002	03/11/11 0	808 BM	v
TPH Diesel	1920	405	3	mg/kg dry	100.00	EPA 8015B mod	1C11002	03/19/11 0	743 PM:	3
Surrogate			R	lesult	:	Spike Conc.	Rec	overy F	Rec. Limit	5
a-Pinene (EPA 8015B mo	od)		0.131	mg/kg dry	4.	20 mg/kg dry		3 %	10-112	Q-30
Triacontane (EPA 8015B	mod)		ND n	ng/kg dry	3.	86 mg/kg dry			10-140	Q-30
Total Petroleum Hydro	ocarbons - GRO									R-01
TPH Gasoline	2100	67.5	0.05	mg/kg dry	1,000.00	EPA 8015B mod	1C10010	03/11/11 1	347 ZT	
Surrogate			R	lesult	9	Spike Conc.	Rec	overy F	Rec. Limit	3
4-Bromofluorobenzene (E	EPA 8015B mod)		0.149	mg/kg dry	0.0	675 mg/kg dry	/ 2	21 %	55-140	Q-29
BTEX										
Benzene	ND	1.35	1	ug/kg dry	1.00	EPA 8021B	1C10010	03/11/11 1	320 ZT	Q-01
Ethyl Benzene	2930	1350	1	ug/kg dry	1,000.00	EPA 8021B	1C10010	03/11/11 1	347 ZT	R-01
Toluene	6930	1350	1	ug/kg dry	1,000.00	EPA 8021B	1C10010	03/11/11 1	347 ZT	R-01
Xylenes (total)	17800	4050	3	ug/kg dry	1,000.00	EPA 8021B	1C10010	03/11/11 1	347 ZT	R-01
Surrogate			R	lesult	5	Spike Conc.	Rec	overy R	lec. Limit	5
4-Bromofluorobenzene (E	EPA 8021B)	·	69.9	ug/kg dry	6	7.5 ug/kg dry	10	04 %	10-140	
4-Bromofluorobenzene (E	EPA 8021B)		90.1	ug/kg dry	6	7.5 ug/kg dry	1:	33 %	10-140	
<b>Conventional Chemist</b>	try Parameters									
% Solids	74	0.20	0.2	%	1.00	SM 2540G	1C10028	03/10/11 1	в15 ктр	S-14



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Louisiana: 02007 Kansas: E-10388 Texas: T104704232-10-1

## **Report of Sample Analysis**

Southwest Ge		Page:	Pa	ge 12 of 21	omn					
Son Antonio				Project	. c		omp			
San Antonio,				Project	#:	0210003				
ATTN: Josepr	n vv. Martinez			Print Da	ate/1/	ne: 03/	21/11 10	5:23		
Laboratory ID #: 1103275-10	<u>Sample Type</u> Grab		<u>Ma</u> Sol	<u>trix</u> id		 	Sample C B. Chris M	Collected	Ву С	ustomer
Sample Description B-8 (7-8)			<u>Sar</u> 02/:	<u>mple Daṫe/T</u> 25/11 1015	<u>ïme</u>					
Analyte(s)	Result	SRL	MRL	Units	F*	Method	Batch	Analys Date/Tir	is ne Anlst	Flag
Total Petroleum Hydro	ocarbons - DRO		•						•	R-01
Ultrasonic Extraction	Completed	N/A	N/A	N/A	1.00	EPA 3550B	1C11002	03/11/11 0	808 BMW	
TPH Diesel	199	35.8	3	mg/kg dry	10.00	EPA 8015B mod	1C11002	03/19/11 0	1429 PMS	
Surrogate			F	Result		Spike Conc.	Rec	overy F	Rec. Limits	
a-Pinene (EPA 8015B mo	nd)		0.703	mg/kg dry	:	3.72 mg/kg dry	1	9 %	10-112	
Triacontane (EPA 8015B	mod)		2.27	mg/kg dry	:	3.41 mg/kg dry	6	6 %	10-140	
Total Petroleum Hydro	ocarbons - GRO									
TPH Gasoline	ND	0.0597	0.05	mg/kg dry	1.00	EPA 8015B mod	1C10010	03/10/11 2	254 TA	Q-22
Surrogate			F	Result		Spike Conc.	Reco	overy F	Rec. Limits	
4-Bromofluorobenzene (E	PA 8015B mod)		0.0626	0.0626 mg/kg dry		0.0597 mg/kg dry		)5 %	55-140	
BTEX										
Benzene	ND	1.19	1	ug/kg dry	1.00	EPA 8021B	1C10010	03/10/11 2	254 TA	
Ethyl Benzene	ND	1.19	1	ug/kg dry	1.00	EPA 8021B	1C10010	03/10/11 2	254 TA	
Toluene	ND	1.19	1	ug/kg dry	1.00	EPA 8021B	1C10010	03/10/11 2	254 TA	
Xylenes (total)	ND	3.58	3	ug/kg dry	1.00	EPA 8021B	1C10010	03/10/11 2	254 TA	
Surrogate			F	lesult		Spike Conc.	Reco	overy F	Rec. Limits	
4-Bromofluorobenzene (E	PA 8021B)		59.8	ug/kg dry	:	59.7 ug/kg dry	y 100 % 10			
<b>Conventional Chemist</b>	ry Parameters									
% Solids	84	0.20	0.2	%	1.00	SM 2540G	1C10028	03/10/11 1	815 KTF	S-14

Std Rpt v.2.7-072610



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<u>State Certifications</u> Arkansas: 88-0647 Oklahoma: 8727



Louisiana: 02007 Kansas: E-10388 Texas: T104704232-10-1

# **Report of Sample Analysis**

Southwest Ge	Page:	Pa	ge 13 of 21	`omn						
Son Antonio	ay Sileei			Project	. с 		omp			
	IN /021/			Project	#: •••• (TT:	0210003	01/11 1/	e.00		
ATTN. 305ep				Print Di	ate/ I Ir	ne: 03/	21/11/10	5.25		
Laboratory ID #: 1103275-11	<u>Sample Type</u> Grab		<u>Mat</u> Soli	t <u>rix</u> id		<u>.</u>	Sample ( B. Chris N	Collected I	<u>By</u> Cus	tomer
Sample Description B-9 (4-5)			<u>Sar</u> 02/2	<u>nple Date/T</u> 25/11 1025	<u>ime</u>					
Analyte(s)	Result	SRL	MRL	Units	F*	Method	Batch	Analysi Date/Tim	s le Anist	Flag
Total Petroleum Hydro	ocarbons - DRO		-							
Ultrasonic Extraction	Completed	N/A	N/A	N/A	1.00	EPA 3550B	1C11002	03/11/11 08	808 BMW	
TPH Diesel	4.50	3.59	3	mg/kg dry	1.00	EPA 8015B mod	1C11002	03/18/11 21	45 PMS	C-01
Surrogate			R	Result		Spike Conc.	Rec	overy R	ec. Limits	
a-Pinene (EPA 8015B m	od)		1.58	mg/kg dry	3	3.73 mg/kg dry	4	2 %	10-112	
Triacontane (EPA 8015B	mod)		2.49	mg/kg dry	3	3.42 mg/kg dry	7	3 %	10-140	
Total Petroleum Hydro	ocarbons - GRO									
TPH Gasoline	ND	0.0598	0.05	mg/kg dry	1.00	EPA 8015B mod	1C10010	03/10/11 23	147 TA	
Surrogate			R	lesult		Spike Conc.	Rec	overy R	ec. Limits	
4-Bromofluorobenzene (E	EPA 8015B mod)		0.0603	8 mg/kg dry	<b>0</b> .	0598 mg/kg dry	y 101 %		55-140	
BTEX										
Benzene	ND	1.20	1	ug/kg dry	1.00	EPA 8021B	1C10010	03/10/11 23	47 TA	
Ethyl Benzene	ND	1.20	1	ug/kg dry	1.00	EPA 8021B	1C10010	03/10/11 23	47 TA	
Toluene	4.16	1.20	1	ug/kg dry	1.00	EPA 8021B	1C10010	03/10/11 23	47 TA	
Xylenes (total)	ND	3.59	3	ug/kg dry	1.00	EPA 8021B	1C10010	03/10/11 23	47 TA	
Surrogate			R	lesult		Spike Conc.	Rece	overy R	ec. Limits	
4-Bromofluorobenzene (E	EPA 8021B)		62.1	ug/kg dry	5	59.8 ug/kg dry	10	04 %	10-140	
<b>Conventional Chemist</b>	try Parameters									
% Solids	84	0.20	0.2	%	1.00	SM 2540G	1C10028	03/10/11 18	15 KTF	S-14

Std Rpt v.2.7-072610



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# **Report of Sample Analysis**

Southwest Ge	Page: Project	Pag	je 14 of 21 Carlshad C	omn						
San Antonio	TY 79217			Dreject	ں .س	0210003	omp			
ATTN: Josen	h W. Martinez			Project Print D	#. ato/Tin	0210003	21/11 16	3.23		
<u>Laboratory ID #:</u> 1103275-12	<u>Sample Type</u> Grab		<u>Mat</u> Soli	<u>rix</u> d			Sample C 3. Chris M	Collected By 1itchell	L Cus	tomer
Sample Description B-9 (7-8)			<u>San</u> 02/2	<u>nple Date/T</u> 25/11 1030	ime					
Analyte(s)	Result	SRL	MRL	Units	F*	Method	Batch	Analysis Date/Time	Anist	Flag
Total Petroleum Hydro	ocarbons - DRO	<b>_</b>	•	•						
Ultrasonic Extraction	Completed	N/A	N/A	N/A	1.00	EPA 3550B	1C11002	03/11/11 0808	3 BMW	
TPH Diesel	8.98	5.58	3	mg/kg dry	1.00	EPA 8015B mod	1C11002	03/19/11 0239	) PMS	C-01
Surrogate a-Pinene (EPA 8015B mo	od)		R 3.34 i	tesult mg/kg dry	5	Spike Conc. 79 mg/kg dry	Reco 5	overy Red 8%	:. Limits 10-112	
Triacontane (EPA 8015B	mod)		4.92 /	mg/kg dry	5	.31 mg/kg dry	9	3 %	10-140	
Total Petroleum Hydro	ocarbons - GRO									
TPH Gasoline	ND	0.0929	0.05	mg/kg dry	1.00	EPA 8015B mod	1C10010	03/11/11 0013	; TA	
Surrogate			R	lesult		Spike Conc.	Reco	overy Red	:. Limits	
4-Bromofluorobenzene (B	EPA 8015B mod)		0.0923 mg/kg dry 0.092		0.0929 mg/kg dry		9 %	55-140		
BTEX										
Benzene	ND	1.86	1	ug/kg dry	1.00	EPA 8021B	1C10010	03/11/11 0013	tA TA	
Ethyl Benzene	ND	1.86	1	ug/kg dry	1.00	EPA 8021B	1C10010	03/11/11 0013	; TA	
Toluene	ND	1.86	1	ug/kg dry	1.00	EPA 8021B	1C10010	03/11/11 0013	i TA	
Xylenes (total)	ND	5.58	3	ug/kg dry	1.00	EPA 8021B	1C10010	03/11/11 0013	, TA	
Surrogate			R	esult		Spike Conc.	Reco	overy Rec	:. Limits	
4-Bromofluorobenzene (E	EPA 8021B)		97.8	ug/kg dry	ç	)2.9 ug/kg dry	10	05 %	10-140	
<b>Conventional Chemist</b>	try Parameters									
% Solids	54	0.20	0.2	%	1.00	SM 2540G	1C10028	03/10/11 1815	, KTF	S-14



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# **Report of Sample Analysis**

Page: Page 15 of 21
Project: S. Carlsbad Comp
Project #: 0210003
Print Date/Time: 03/21/11 16:23

#### Total Petroleum Hydrocarbons - DRO - Quality Control

Analyte(s)	Result	*SRL		Spike	Source Result	%REC	%REC	RPD	RPD Limit	Flag
Batch 1C11002 - EPA 355	50B Sonication Ext	raction				-, i	•			•
Blank (1C11002-BLK1) Prepared & Analyzed: 03/11	1/11 08:08	, dan							,.	
Ultrasonic Extraction	Completed	N/A	N/A							
TPH Diesel	ND	3.00	mg/kg wet							
Surrogate: a-Pinene	1.72		mg/kg wet	3.11		55	1-109			
Surrogate: Triacontane	2.90		mg/kg wet	2.86		102	1-170			
Laboratory Control Sample Prepared & Analyzed: 03/11	e (1C11002-BS1) 1/11 08:08									
Ultrasonic Extraction	Completed	N/A	N/A				0-0			
TPH Diesel	28.6	3.00	mg/kg wet	28.6		100	43-138			
Surrogate: a-Pinene	1.69		mg/kg wet	3.11		54	1-109			
Surrogate: Triacontane	2.75		mg/kg wet	2.86		96	1-170			
Laboratory Control Sample Prepared & Analyzed: 03/11	Duplicate (1C11002- 1/11 08:08	BSD1)								
Ultrasonic Extraction	Completed	N/A	N/A				0-0		0	
TPH Diesel	29.1	3.00	mg/kg wet	28.6		102	43-138	2	24	
Surrogate: a-Pinene	1.71		mg/kg wet	3.11		55	1-109			
Surrogate: Triacontane	2.84		mg/kg wet	2.86		100	1-170			
Matrix Spike (1C11002-MS1 Prepared & Analyzed: 03/11	l) l/11 08:08			S	ource: 1103275	i-01				R-01
Ultrasonic Extraction	Completed	N/A	N/A		ND		0-0			
TPH Diesel	2830	421	mg/kg dry	4010	4830	-50	10-140			Q-02
Surrogate: a-Pinene	16.7		mg/kg dry	4.37		382	10-109			Q-29
Surrogate: Triacontane	ND		mg/kg dry	4.01		0	10-140			Q-30
Matrix Spike Duplicate (1C Prepared & Analyzed: 03/11	11002-MSD1) 1/11 08:08			S	ource: 1103275	i-01				R-01
Ultrasonic Extraction	Completed	N/A	N/A		ŃD		0-0		0	
TPH Diesel	3230	421	mg/kg dry	4010	4830	-40	10-140	13	20	Q-02
Surrogate: a-Pinene	34.1		mg/kg dry	4.37		782	10-109			Q-29
Surrogate: Triacontane	ND		mg/kg dry	4.01		0	10-140			Q-30



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# **Report of Sample Analysis**

Southwest Geoscience 8829 Tradeway Street San Antonio, TX 78217 ATTN: Joseph W. Martinez Page:Page 16 of 21Project:S. Carlsbad CompProject #:0210003Print Date/Time:03/21/11 16:23

#### Total Petroleum Hydrocarbons - GRO - Quality Control

Analyta(a)	l Beeute I	*00	L unitar I	Spike	Source		%REC	RPD	RPD	Flag
Anamers	Trep and Eutro	<u>"381</u>		l evel	Result					Thug
Batch TC TOUTU - Purge-and-	Trap and Extrac		1 3011							
Blank (1C10010-BLK1) Prepared: 03/10/11 09:29 Anal	yzed: 03/10/11 21:	10								
TPH Gasoline	ND	0.0500	mg/kg wet							
Surrogate: 4-Bromofluorobenzene	0.0496		mg/kg wet	0.0500		99	55-140			
Laboratory Control Sample (10 Prepared: 03/10/11 09:29 Analy	C10010-BS1) yzed: 03/10/11 21:	36								
TPH Gasoline	0.409	0.0500	mg/kg wet	0.500		82	66-117			
Surrogate: 4-Bromofluorobenzene	0.0502		mg/kg wet	0.0500		100	55-140			
Laboratory Control Sample Du Prepared: 03/10/11 09:29 Analy	plicate (1C10010- yzed: 03/10/11 22:	<b>BSD1)</b> 02								
TPH Gasoline	0.457	0.0500	mg/kg wet	0.500		91	66-117	11	18	
Surrogate: 4-Bromofluorobenzene	0.0510		mg/kg wet	0.0500		102	55-140			
Matrix Spike (1C10010-MS1) Prepared: 03/10/11 09:29 Analy	yzed: 03/10/11 22:	28		So	urce: 1103275	-10				
TPH Gasoline	0.524	0.0597	mg/kg dry	0.597	ND	88	10-140			
Surrogate: 4-Bromofluorobenzene	0.0622		mg/kg dry	0.0597		104	55-140			
Matrix Spike Duplicate (1C100 Prepared: 03/10/11 09:29 Analy	<b>10-MSD1)</b> yzed: 03/11/11 02:	24		So	urce: 1103275	-10				
TPH Gasoline	0.826	0.0597	mg/kg dry	0.597	ND	138	10-140	45	38	Q-04
Surrogate: 4-Bromofluorobenzene	0.0785		mg/kg dry	0.0597		131	55-140			



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# **Report of Sample Analysis**

Southwest Geoscience	Page: Page 17 of 21
8829 Tradeway Street	Project: S. Carlsbad Comp
San Antonio, TX 78217	Project #: 0210003
ATTN: Joseph W. Martinez	Print Date/Time: 03/21/11 16:23

**BTEX - Quality Control** 

Analyte(s)	Result	*SRI	I ⊔nits I	Spike	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 1C10010 - Purge-and	-Trap and Extrac	tion-VOCs i	n Soil							
Blank (1C10010-BLK1) Prepared: 03/10/11 09:29 Anal	yzed: 03/10/11 21:	10								
Benzene	ND	1.00	ug/kg wet							
Ethyl Benzene	ND	1.00	ug/kg wet							
Toluene	ND	1.00	ug/kg wet							
Xylenes (total)	ND	3.00	ug/kg wet							
Surrogate: 4-Bromofluorobenzene	54.0		ug/kg wet	50.0		108	18-140			
Laboratory Control Sample (10 Prepared: 03/10/11 09:29 Anal	C10010-BS1) yzed: 03/10/11 21:	36								
Benzene	44.6	1.00	ug/kg wet	50.0		89	80-118			
Ethyl Benzene	46.6	1.00	ug/kg wet	50.0		93	77-123			
Toluene	45.3	1.00	ug/kg wet	50.0		91	79-118			
Xylenes (total)	134	3.00	ug/kg wet	150		89	80-121			
Surrogate: 4-Bromofluorobenzene	48.6		ug/kg wet	50.0		97	18-140			
Laboratory Control Sample Du Prepared: 03/10/11 09:29 Anal	uplicate (1C10010-I yzed: 03/10/11 22:0	<b>BSD1)</b> 02				644 - F				
Benzene	43.2	1.00	ug/kg wet	50.0		86	80-118	3	10	
Ethyl Benzene	51.7	1.00	ug/kg wet	50.0		103	77-123	10	11	
Toluene	50.6	1.00	ug/kg wet	50.0		101	79-118	11	11	
Xylenes (total)	150	3.00	ug/kg wet	150		100	80-121	11	11	
Surrogate: 4-Bromofluorobenzene	50.4		ug/kg wet	50.0		101	18-140			
Matrix Spike (1C10010-MS1) Prepared: 03/10/11 09:29 Anal	yzed: 03/10/11 22:	28		So	urce: 110327	5-10				
Benzene	58.8	1.19	ug/kg dry	59.7	ND	98	21-140			
Ethyl Benzene	57.5	1.19	ug/kg dry	59.7	ND	96	10-140			
Toluene	56.5	1.19	ug/kg dry	59.7	ND	95	28-140			
Xylenes (total)	165	3.58	ug/kg dry	179	ND	92	13-140			
Surrogate: 4-Bromofluorobenzene	60.3		ug/kg dry	59.7		101	18-140			

1



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### **Report of Sample Analysis**

Southwest GeosciencePage:Page 18 of 218829 Tradeway StreetProject:S. Carlsbad CompSan Antonio, TX 78217Project #:0210003ATTN: Joseph W. MartinezPrint Date/Time:03/21/11 16:23

#### **BTEX - Quality Control**

	Result	*SRI	Units	Spike Level	Source Result	8 %REC	%REC	RPD	RPD Limit	Flag
Batch 1C10010 - Purge-ar	nd-Trap and Extrac	tion-VOCs i	n Soil (conti	nued)		•	•			•
Matrix Spike Duplicate (1C1	0010-MSD1)									
Prepared: 03/10/11 09:29 Ar	nalvzed: 03/11/11 02:2	24		So	urce: 1103275	-10				

Benzene	55.9	1.19	ug/kg dry	59.7	ND	94	21-140	5	29
Ethyl Benzene	51.4	1.19	ug/kg dry	59.7	ND	86	10-140	11	27
Toluene	59.9	1.19	ug/kg dry	59.7	ND	100	28-140	6	32
Xylenes (total)	153	3.58	ug/kg dry	179	ND	85	13-140	8	40
Surrogate: 4-Bromofluorobenzene	58.5		ug/kg dry	59.7		98	18-140		



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# **Report of Sample Analysis**

Southwest Geoscience 8829 Tradeway Street San Antonio, TX 78217 ATTN: Joseph W. Martinez Page:Page 19 of 21Project:S. Carlsbad CompProject #:0210003Print Date/Time:03/21/11 16:23

#### Conventional Chemistry Parameters - Quality Control

Analyte(s)	Result	*SRI	Units	Spike	Source Result	%REC %REC Limits	RPD	RPD Limit	Flag
Batch 1C10028									
Blank (1C10028-BLK1) Prepared & Analyzed: 03/10/11	18:15						~~~		
% Solids	ND	0.20	%						
Duplicate (1C10028-DUP1) Prepared & Analyzed: 03/10/11	18:15			Sou	rce: 1103275	-01			
% Solids	72	0.20	%		71		0.3	4	
Duplicate (1C10028-DUP2) Prepared & Analyzed: 03/10/11	18:15			Sou	rce: 1103275	-11			
% Solids	83	0.20	%		84		0.2	4	



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## **Report of Sample Analysis**

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Southwest Geoscience	Page:	Page 20 of	21
8829 Tradeway Street	Project:	S. Carls	oad Comp
San Antonio, TX 78217	Project #	: 02100	03
ATTN: Joseph W. Martinez	Print Date	e/Time:	03/21/11 16:23

#### **Notes and Definitions**

~ ~ 4

The results presented in this report were generated using those methods given in 40 CFR Part 136 for Water and Wastewater samples and in SW-846 for RCRA/Solid Waste samples.

C-01	The sample contains a single peak not indicative of a diesel pattern which contributes to the total concentration.
Q-01	The recovery of the internal standard(s) was outside the acceptable range in this sample due to matrix interference. No target compounds were identified in the sample, therefore, this has no effect on the results presented.
Q-02	The recovery of this analyte in the MS was outside the acceptable range due to interference, large dilutions required for analysis or a combination of these factors. The recovery of this analyte in the LCS(s) was within the acceptable range.
Q-04	The RPD of this analyte between the MS(s) was outside of the acceptable range. The RPD of this same analyte between the LCS(s) was within the acceptable range.
Q-13	The recovery of the internal standard used to quantify this result was higher than the acceptable range due to matrix interference. This causes a low bias to the result presented.
Q-21	The recovery of this analyte in the MS was lower than the acceptable range. This indicates a low bias to the result presented.
Q-22	The RPD between the MS(s) sample analyses was outside the acceptable range. This indicates the result was not as precise as expected.
Q-29	The recovery of the surrogate in this sample was higher than the acceptable range due to matrix interference and/or large dilutions required for analysis. This may indicate a high bias to the compounds in the sample that this surrogate represents.
Q-30	The recovery of the surrogate in this sample was lower than the acceptable range due to matrix interference and/or large dilutions required for analysis. This may indicate a low bias to the compounds in the sample that this surrogate represents.
R-01	The higher reporting limit is due to dilutions required for analysis as a result of a high concentration of target and/or non-target parameters in this sample.
S-14	This analysis was performed outside the recommended holding time. This analysis is used only for dry weight calculation and is representative of the total solids present in the sample at the time the dry weight corrected analyses were performed.
ND	Analyte NOT DETECTED at or above the reporting limit
dry	Sample results reported on a dry weight basis
LCS/LCSD	Laboratory Control Sample/Laboratory Control Sample Duplicate
MS/MSD	Matrix Spike/Matrix Spike Duplicate
RPD	Relative Percent Difference
mg/kg	milligrams per kilogram
mg/l	milligrams per liter



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# **Report of Sample Analysis**

Southwest Geoscience	Page: Page 21 of 21
8829 Tradeway Street	Project: S. Carlsbad Comp
San Antonio, TX 78217	Project #: 0210003
ATTN: Joseph W. Martinez	Print Date/Time: 03/21/11 16:23

ug/kg	micrograms per kilogram
ug/l	micrograms per liter
exc	Not covered under scope of NELAP accreditation.
F*	Calculated factor rounded to 3 significant figures. Concentration factor when <1.00 and dilution factor when <1.00.
Anlst	Analyst Initials
SRL	Sample Reporting Limit
MRL	Method Reporting Limit
naa	This analysis/parameter is not accreditable under the current NELAP program

#### Shelly Connelly

From:	Joseph Martinez [Joseph.Martinez@southwestgeoscience.com]
Sent:	Wednesday, March 09, 2011 2:46 PM
To:	ERMI Environmental Services
Cc:	chris.mitchell@southwestgeoscience.com
Subject	1 0210003 S. Carlsbad CS

Please analyze the following soil samples with the following IDs for BTEX (8021B) and TPH GRO (8015M) which were collected on 2.25.11 for the above project: B-3 (6-7), B-4 (3-4), B-4 (5-6), B-5 (4-5), B-6 (4-5), B-6 (7-8), B-7 (2-3), B-7 (5-6), B-8 (4-5), B-8 (7-8), B-9 (4-5), and B-9 (7-8). We will be in touch at a later date as to whether we will need them analyzed. Also, please start the TPH DRO (8015M) extraction process for the same soil samples. Please use standard turnaround time.

Thanks,

Joseph W. Martinez | Project Manager Southwest Geoscience

8829 Tradeway Street | San Antonio, Texas 78217 210.804.9922 | ≜ 210.804.9944 | c 210.355.6280

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		•		• •			CHAIN	OF CUSTODY RECORD
Southwes	St Laboratory:	ERMI			Analysis Request			Lab use only Due Date:
Environmental & Hydrogeologic Const	Address: 40	N. Det N.	HANY # 75013	140	348	518 a		Temp. of coolers when received (C°):
Office Location JAN MUNTO	<u>Nío</u> Contact: Phone:(9	72) 72	27-1123		See.			Page_/of_2
Bampler's Name B. CHRIS MITCHEU	E Z     PO/SO #:       Sampler's Signal       Z	iture			60/00 51	ha l		
Proj. No. $\partial 2 10 00 3$ Project Name 5	CARLSBAD COM	ρ	No/Type of C	Containers	# d	Fer /		
Matrix Date Time O G m a ld P b	entifying Marks of Sample(s)	Start Depth End Depth	VOA A/G 1 止.	250 - P/O mi	1712			Lab Sample ID (Lab Use Only)
S 2.25.11 845 1	3-3(6-7)	67			-			103275-01
5 2.25.11 855 V i	3-4 (3-4)	34		1		, .		103275-02
5 2.25.11 900 1 1	3-4 (5-6)	56		1	/			10322-03
5 2-25/1 910 /	B-5 (4-5)	4 5	· ·					103275-54
S 2.15.11 925 V	3-6 (4-5)	45		1	1			103275-05
5 2.25.11 930	B-6(7-8)	7 8		$  _{l^{*}}$	-			17375-06
S 2.25.11 935 /	B - 7(2-3)	23		1	/			10225-07
S 2.25.11 940 /	B-7(5-6)	56		1.	-			163275-08
S 2.25.11 1010 J	8-8 (4-5)	4 5		1				103225.29
5 2.25.11 1015 V	B-? (4-B)	78		1				1103275-10
Turn around time ONormal 25%	Rush 🖸 50% Rush	100% Rush		D	Time			· · · · · · · · · · · · · · · · · · ·
Newgonished by (Signature)		ign Th		2/2		NOTES:		
Relinquished by (Signature) Dat	te: Time: Receiv	red by: (Signa	ture) GRM	n/ Date 1 2/2	e: Time 8/1 1224		• • • •	• • • • • • • • • • • • • • • • • • •
Relinquished by (Signature) Da	te: Time: Receiv	ed by: (Signa	ature)	Date	e: Time	:		
Relinquished by (Signature) Da	te: Time: Receiv	ved by: (Signa	ature)	Date	e: Time:	:	di.	
Matrix WW - Wastewater W Container VOA - 40 ml vial A/C	- Water S - Soil SD - So S - Amber / Or Glass 1 Liter	lid L - Liqui 250 ml	id A - Air B - Glass wide m	ag C outh P/	- Charcoal tube /O - Plastic or oth	SL - studge	O - Oil	<u> </u>

.

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対応なってない時間を読むないないの意味がなっていることであったができたがで

				C	HAIN OF CUSTODY RECORD
Southwest Environmental & Hydrogeologic Consultants Office Location SAN ANTONIO Project Manager J. MANTINEZ Sampler's Name B. CHUIS MITCHER	Laboratory: <u>FPM</u> Address: <u>400 W. Bo</u> <u>ALLEN</u> <u>TY</u> Contact: Phone: <u>1972</u> 72 PO/SO #: Sampler's Signature	75013 75013 27-1123	Analysis Requester 109 75-75 200 97-75		Lab use only Due Date: Temp. of coolers when received (C°): FB-O1 Temp 1/192 3 4 5 Pageof
Proj. No. D2/0 00 3 S. CARLS	BAD COMP.	No/Type of Containers	Here I		
Matrix Date Time C G G r Identifying M	arks of Sample(s) traft p to a	VOA A/G 250 P/O			Lab Sample ID (Lab Use Only)
B 2.25.11 1025 - B-9	(4-5) 45	. 1			11:26201
S 2.25.11 1030 - B-9	(7-8) 78	)			110327112
· · · · · · · · · · · · · · · · · · ·					· · · ·
					·
Not					
Turn around time	□ 50% Rush □ 100% Rush				······································
Relinquished by (Signature)     Date: 2/2¥/N       Relinquished by (Signature)     Date:	Time: Received by: (Signat 52 Time: Received by: (Signat	ture) Date: 2/2% ture) E 2/11 Date: Date:	Time:         NC           /I         //:sz           /I         Time:	DTES:	
Willigm Trustott 2/28/11 L Relinquished by (Signature) Date:	Time: Received by: (Signat	ture) Date:	11 1234 Time:		
Relinquished by (Signature) Date:	Time: Received by: (Signat	ture) Date:	Time:		
Matrix www-wastewater W - Water Container VOA - 40 ml viał A/G - Amber /	S - Soli SU - Solid L - Liquid Or Glass 1 Liter 250 ml -	Glass wide mouth P/C	Charcoal tube SL - ) - Plastic or other	siuage O - Oil	

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	NO	TARY SERVICE A	VAILABLE		-	10.	]
IFallCon	7 Press	ME South Wat Grostin DRESS Y	14	suitte	DATE 2/28/11 Feloon Charges	Type of Delivery	Ì
P.O. BOX 940 PLANO, TX 7509 (972) 881-75	We Deliver         Ref           303	FERENCE NO. ME <u>Ermi</u> DRESS 400 W. Bethiay Y <u>Allin</u> N.		suite 190	PREPAID     PREPAID     COLLECT     ROUND TRIP     NIGHT-     WEEKEND	XX-Press     2 HOUR     4 HOUR     NEXT DAY	
NOL POB		DESCRIPTION AND REMARKS	3 		WEIGHT CHARGE WATING TIME CHG DELIVERY OHARGE	CHARGES	
NATING TIME	LAIMS AFTER 72 HRS. NOT RI ABLE PLANO, COLLIN COUNT	ESPONSIBLE FOR Y, TEXAS	\$50 DECLARED V UNLESS SPECIFI	ALUE ED HERE \$			
		Custo	dy Seal	Tie Underson		· · · · · · · · · · · · · · · · · · ·	<b>.</b>
ERMI	Sample D. No.	ble	Date			ERMI ×4	84
1	······						••••••••••••••••••••••••••••••••••••••
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Lab Number(s):

# ERMI **Sample Preservation Documentation**

5 m3/1.2"

On Ice (Circle One) YES OR NO (check if on Dry Ice\_

3

Parameters	Cont #	ainers Size	Required Preservation	Sample Container	Circle pH Note any discrepancy		
Metals			pH < 2	Glass or Plastic	pH < 2		
Dissolved Metals			Unpreserved prior to being filtered, Cool**	Glass or Plastic			
Hexavalent Chromium		1	CWA - pH 9.3-9.7, Cool; RCRA - Cool	Glass or Plastic			
Semivolatiles, Pesticides, PCBs, Herbicides	· ·		Cool	Glass only with Teflon lid	Chlorine Dyes Ono		
VOA (BTEX, MTBE, 624, 8260, TPH-GRO)			Cool, pH < 2 Zero Head Space	40 ml VOA vial			
VOA (TPH-1005)			Cool, Zero Head Space Please check if collected in pre-weighed vials	40 ml VOA vial			
Phos., NO <sub>3</sub> /NO <sub>2</sub> , NH <sub>3</sub> N, COD, TKN,TOC			Cool, pH < 2	Glass or Plastic	pH < 2		
TDS, BOD, CBOD, Cond, pH, TSS, F, SO <sub>4</sub> , CI, Alk, Sulfite		:	Cool	Glass or Plastic, Plastic only if F			
Phenols, TPH-DRO	· .		Cool, pH < 2	Glass only Teflon lid Foil lid	pH < 2		
Oil & Grease, TPH (by 1664a)			Cool, pH < 2	Glass only Teflon lid Foil lid	an canton Non-Constantin Non-Constantin		
Cyanide			Cool, pH >12	Glass or Plastic	pH > 12 Chlorine Dyes Dno Sulfide Dyes Dno Dna		
Sulfide			Cool, pH > 9	Glass or Plastic	pH > 9		
Bacteria	- - -		Cool	Plastic Sterile Cup			
Soli, Sludge, Solid, Oil, Liquid	12	402	Cool Note: please check if collected in pre-weighed vials	Glara			

Metals Preserved By Login Dyes Dno Trip Blanks Received Dyes Zno COMMENTS:\_

This form is used to document sample preservation. Circle parameter requested. Fill in number and size of containers received. Check pH (adjust if needed) and note if different from what is required and make a notation of any samples not received on ice. Note any incorrect sample containers or preservation on chain-of-custody. \*\*Cool means cooled to  $\leq 6^{\circ}$ C but not frozen.

**Preservation Checked By** 

1000.0-3.2

Date Time

kdy 7/10/08 Q:\Form Masters\1000.0-3.2 Sample Preservation Form

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## COVER LETTER

Wednesday, April 06, 2011

Joseph Martinez Southwest Geoscience 8829 Tradeway Street San Antonio, TX 78217

TEL: (210) 804-9922 FAX (210) 804-9944

RE: S. Carlsbad Compressor Station

Dear Joseph Martinez:

Order No.: 1103962

Hall Environmental Analysis Laboratory, Inc. received 20 sample(s) on 3/25/2011 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites.

Reporting limits are determined by EPA methodology.

Please do not hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Laboratory Manager

NM Lab # NM9425 NM0901 AZ license # AZ0682 ORELAP Lab # NM100001 Texas Lab# T104704424-08-TX



4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109 505.345.3975 ■ Fax 505.345.4107 www.hallenvironmental.com

Date: 06-Apr-11

CLIENT:Southwest GeoscienceProject:S. Carlsbad Compressor StationLab Order:1103962

# **CASE NARRATIVE**

"S" flags denote that the surrogate was not recoverable, or elevated, due to sample dilution or matrix interferences.

					<u></u>				
CLIENT	: Southwest Geoscience				Cli	ent Sample II	): TS	-1	
Lab Ord	er: 1103962				С	ollection Dat	e: 3/2	4/2011 8:10:00 AM	
<b>Project:</b>	S. Carlsbad Compressor St	ation			J	Date Receive	<b>i:</b> 3/2	5/2011	
Lab ID: 1103962-01						Matri	x: SO	IL	
Analyses		Result	Qual	MDL	PQL	Units		DF Date Analyzed	
CAS #	EPA METHOD 300.0: ANIONS							Analyst: SRM	
16887-00-0	6 Chloride	410		7.9	30	mg/Kg	20	4/1/2011 3:28:27 PM	
CAS #	EPA METHOD 8015B: DIESEL RA		;					Analyst: JB	
TPH-DRO	Diesel Range Organics (DRO)	1600		43	100	mg/Kg	10	3/31/2011 8:50:20 PM	
117-84-0	Surr: DNOP	0	S	0	81.8-129	%REC	10	3/31/2011 8:50:20 PM	
CAS #	EPA METHOD 8015B: GASOLINE	RANGE			(SW5	i035)		Analyst: NSB	
TPH-GRO	Gasoline Range Organics (GRO)	140	J	80	250	mg/Kg	50	3/30/2011 3:10:57 PM	
460-00-4	Surr: BFB	87.8	S	0	89.7-125	%REC	50	3/30/2011 3:10:57 PM	
CAS #	EPA METHOD 8021B: VOLATILES	8			. (SW5	035)		Analyst: NSB	
71-43-2	Benzene	ND		0.19	2.5	mg/Kg	50	3/30/2011 3:10:57 PM	
108-88-3	Toluene	ND		0.23	2.5	mg/Kg	5Ò	3/30/2011 3:10:57 PM	
100-41-4	Ethylbenzene	ND		0.23	2.5	mg/Kg	50	3/30/2011 3:10:57 PM	
1330-20-7	Xylenes, Total	ND		0.69	5.0	mg/Kg	50	3/30/2011 3:10:57 PM	
460-00-4	Surr: 4-Bromofluorobenzene	103		0	85.3-139	%REC	50	3/30/2011 3:10:57 PM	

Date: 11-Apr-11

Qualiflers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

B - Analyte detected in the associated Method Blank

\* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Page 1 of 20

CLIENT	: Southwest Geoscience				Clie	ent Sample I	D: TS	2		
Lab Ord	er: 1103962				С	<b>Collection Date:</b>		3/24/2011 8:15:00 AM		
Project:	S. Carlsbad Compressor St	ation			]	Date Receive	ed: 3/2	5/2011		
Lab ID:	1103962-02					Matr	ix: SO	IL .		
Analyses		Result Qual MDL PQL Units					DF Date Analyzed			
CAS #	EPA METHOD 300.0: ANIONS							Analyst: SRM		
16887-00-6	3 Chloride	310		7.9	30	mg/Kg	20	4/1/2011 8:07:00 PM		
CAS #	EPA METHOD 8015B: DIESEL RA		3			<i>,</i>		Analyst: JB		
TPH-DRO	Diesel Range Organics (DRO)	770		43	100	mg/Kg	10	3/31/2011 9:24:42 PM		
117-84-0	Surr: DNOP	0	S	0	81.8-129	%REC	10	3/31/2011 9:24:42 PM		
CAS#	EPA METHOD 8015B: GASOLINE	RANGE			(SW5	6035)		Analyst: NSB		
TPH-GRO	Gasoline Range Organics (GRO)	8.3	J	8.0	25	mg/Kg	5	3/30/2011 3:39:49 PM		
\$60-00-4	Surr: BFB	92.0		0	89.7-125	%REC	5	3/30/2011 3:39:49 PM		
CAS #	EPA METHOD 8021B: VOLATILES	8			(SW5	035)		Analyst: NSB		
71-43-2	Benzene	ND		0.019	0.25	mg/Kg	5	3/30/2011 3:39:49 PM		
108-88-3	Toluene	ND		0.023	0.25	mg/Kg	. 5	3/30/2011 3:39:49 PM		
100-41-4	Ethylbenzene	ND		0.023	0.25	mg/Kg	5	3/30/2011 3:39:49 PM		
1330-20-7	Xylenes, Total	ND	,	0.069	0.50	mg/Kg	5	3/30/2011 3:39:49 PM		
460-00-4	Surr: 4-Bromofluorobenzene	106		0	85.3-139	%REC	5	3/30/2011 3:39:49 PM		

Date: 11-Apr-11

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

B - Analyte detected in the associated Method Blank

\* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Page 2 of 20

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CLIENT	` <b>:</b>	Southwest Geoscience				Clie	ent Sample ID:	TS	-3		
Lab Ord	Lab Order: 1103962					<b>Collection Date:</b>			3/24/2011 8:20:00 AM		
Project:S. Carlsbad CompressorLab ID:1103962-03		S. Carlsbad Compressor Sta	ation			Date Received:			3/25/2011		
		1103962-03	1103962-03				Matrix:		SOIL		
Analyses			Result	Qual	MDL	PQL	Units		DF Date Analyzed		
CAS #	EPA	METHOD 300.0: ANIONS							Analyst: SRM		
1 <b>6887-00-</b> 0	6 C	hloride	600		7.9	30	mg/Kg	20	4/1/2011 8:41:49 PM		
CAS #	EPA	METHOD 8015B: DIESEL RA		5					Analyst: JB		
TPH-DRO	Di	iesel Range Organics (DRO)	1700		43	100	mg/Kg	10	3/31/2011 9:58:52 PM		
117-84-0		Surr: DNOP	0	S	0	81.8-129	%REC	10	3/31/2011 9:58:52 PM		
CAS #	EPA	METHOD 8015B: GASOLINE	RANGE			(SW5	035)		Analyst: NSB		
TPH-GRO	G	asoline Range Organics (GRO)	ND		80	250	mg/Kg	50	3/30/2011 4:08:43 PM		
460-00-4		Surr: BFB	93.8		0	89.7-125	%REC	50	3/30/2011 4:08:43 PM		
CAS#	EPA	METHOD 8021B: VOLATILES	;			(SW5	035)		Analyst: NSB		
71-43-2	Be	enzene	ND		0.19	2.5	mg/Kg	50	3/30/2011 4:08:43 PM		
108-88-3	Тс	bluene	ND		0.23	2.5	mg/Kg	50	3/30/2011 4:08:43 PM		
100-41-4	Et	hylbenzene	ND		0.23	2.5	mg/Kg	50	3/30/2011 4:08:43 PM		
1330-20-7	، Xy	rlenes, Total	0.83	J	0.69	5.0	mg/Kg	50	3/30/2011 4:08:43 PM		
460-00-4		Surr: 4-Bromofluorobenzene	105		0	85.3-139	%REC	50	3/30/2011 4:08:43 PM		

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

B - Analyte detected in the associated Method Blank

\* - Value exceeds Maximum Contaminant Level

- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits
- E Value above quantitation range

Page 3 of 20

Date: 11-Apr-11

# Hall Environmental Analysis Laboratory, Inc.

CLIENT	Southwest Geoscience				Clie	ent Sample II	D: TS	-4		
Lab Ord	er: 1103962				<b>Collection Date:</b>			3/24/2011 8:25:00 AM		
Project: S. Carlsbad Compressor Lab ID: 1103962-04 Analyses		tation		•	Date Received:			3/25/2011		
						Matri	IL			
		Result	Qual	MDL	PQL	Units		DF Date Analyzed		
CAS #	EPA METHOD 300.0: ANIONS							Analyst: SRM		
16887-00-6	6 Chloride	270		7.9	30	mg/Kg	20	4/1/2011 9:16:38 PM		
CAS #	EPA METHOD 8015B: DIESEL RA	NGE ORG	;					Analyst: JB		
TPH-DRO	Diesel Range Organics (DRO)	1300		43	100	mg/Kg	10	3/31/2011 10:33:02 PM		
117-84-0	Surr: DNOP	0	S	0	81.8-129	%REC	10	3/31/2011 10:33:02 PM		
CAS #	EPA METHOD 8015B: GASOLINE	RANGE			(SW5	i035)		Analyst: NSB		
TPH-GRO	Gasoline Range Organics (GRO)	17	J	8.0	25	mg/Kg	5	3/30/2011 4:37:33 PM		
460-00-4	Surr: BFB	107		0	89.7-125	%REC	5	3/30/2011 4:37:33 PM		
CAS#	EPA METHOD 8021B: VOLATILE	S			(SW5	035)		Analyst: NSB		
71-43-2	Benzene	ND		0.019	0.25	mg/Kg	5	3/30/2011 4:37:33 PM		
108-88-3	Toluene	ND		0.023	0.25	mg/Kg	5	3/30/2011 4:37:33 PM		
100-41-4	Ethylbenzene	ND		0.023	0.25	mg/Kg	5	3/30/2011 4:37:33 PM		
1330-20-7	Xylenes, Total	0.14	J	0.069	0.50	mg/Kg	5	3/30/2011 4:37:33 PM		
460-00-4	Surr: 4-Bromofluorobenzene	107		0	85.3-139	%REC	5	3/30/2011 4:37:33 PM		

Date: 11-Apr-11

Qualifiers:

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E - Value above quantitation range

Page 4 of 20

CLIENT	Southwest Geoscience				Clie	ent Sample ID	: TS	-5		
Lab Ord	er: 1103962				C	<b>Collection Date:</b>		3/24/2011 8:30:00 AM 3/25/2011		
Project: S. Carlsbad Compressor		ation			J	Date Received	: 3/2			
Lab ID:	1103962-05					Matrix	x: SOIL			
Analyses		Result	Qual	MDL	PQL Units			DF Date Analyzed		
CAS #	EPA METHOD 300.0: ANIONS							Analyst: SRM		
16887-00-0	6 Chloride	440		7.9	30	mg/Kg	20	4/1/2011 4:38:05 PM		
CAS #	EPA METHOD 8015B: DIESEL RA		<b>)</b> .					Analyst: JB		
TPH-DRO	Diesel Range Organics (DRO)	1300		<b>43</b>	100	mg/Kg	10	3/31/2011 11:06:51 PM		
117-84-0	Surr: DNOP	0	S	0	81.8-129	%REC	10	3/31/2011 11:06:51 PM		
CAS #	EPA METHOD 8015B: GASOLINE	RANGE			(SW5	035)		Analyst: NSB		
TPH-GRO	Gasoline Range Organics (GRO)	ND		8.0	25	mg/Kg	5	3/30/2011 5:06:31 PM		
460-00-4	Surr: BFB	93.7		0	89.7-125	%REC	5	3/30/2011 5:06:31 PM		
CAS #	EPA METHOD 8021B: VOLATILES	3			(SW5	035)		Analyst: NSB		
71-43-2	Benzene	ND		0.019	0.25	mg/Kg	5	3/30/2011 5:06:31 PM		
108-88-3	Toluene	ND		0.023	0.25	mg/Kg	5	3/30/2011 5:06:31 PM		
100-41-4	Ethyibenzene	ND		0.023	0.25	mg/Kg	5	3/30/2011 5:06:31 PM		
1330-20-7	Xylenes, Total	ND		0.069	0.50	mg/Kg	5	3/30/2011 5:06:31 PM		
460-00-4	Surr: 4-Bromofluorobenzene	107		0	85.3-139	%REC	5	3/30/2011 5:06:31 PM		

Date: 11-Apr-11

Qualifiers:

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E - Value above quantitation range

Page 5 of 20

Hall E	Invironmental Analysis I	abora	tory,	Inc.	,	D	ate:	11-Apr-11	
CLIEN1 Lab Ord	Southwest Geoscience           er:         1103962				Clic	ent Sample ID ollection Date	): TS- 2: 3/2	-6 4/2011 8:35:00 AM	
Project:	S. Carlsbad Compressor Sta	ation			1	Date Received	: 3/2	5/2011	
Lab ID:	1103962-06					Matrix	: 50	IL 	
Analyses		Result	Qual	MDL	PQL	Units		DF Date Analyzed	
CAS # 16887-00-	EPA METHOD 300.0: ANIONS 6 Chloride	190		7.9	30	mg/Kg	20	Analyst: SRM 4/1/2011 5:12:54 PM	
CAS#	EPA METHOD 8015B: DIESEL RA	NGE ORG	6					Analyst: <b>JB</b>	
TPH-DRO	Diesel Range Organics (DRO)	2000		43	100	mg/Kg	10	4/1/2011 12:49:11 AM	
117-84-0	Surr: DNOP	0	S	0	81.8-129	%REC	10	4/1/2011 12:49:11 AM	
CAS #	EPA METHOD 8015B: GASOLINE	RANGE			(SW5	5035)		Analyst: NSB	
TPH-GRO	Gasoline Range Organics (GRO)	ND		160	500	mg/Kg	100	3/30/2011 5:35:29 PM	
460-00-4	Surr: BFB	94.1		0	89.7-125	%REC	100	3/30/2011 5:35:29 PM	
CAS #	EPA METHOD 8021B: VOLATILES	5			(SW5	5035)		Analyst: NSB	
71-43-2	Benzene	ND		0.37	5.0	mg/Kg	100	3/30/2011 5:35:29 PM	
108-88-3	Toluene	ND		0.46	5.0	mg/Kg	100	3/30/2011 5:35:29 PM	
100-41-4	Ethylbenzene	ND		0.45	5.0	mg/Kg	100	3/30/2011 5:35:29 PM	
1330-20-7	Xylenes, Total	1.6	J	1.4	10	m <b>g/K</b> g	100	3/30/2011 5:35:29 PM	
460-00-4	Surr: 4-Bromofluorobenzene	105		0	85.3-139	%REC	100	3/30/2011 5:35:29 PM	

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Date: 11-Apr-11

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E - Value above quantitation range

Page 6 of 20

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CLIENT:Southwest GeoscienceLab Order:1103962Project:S. Carlsbad Compressor		Station		<del></del>	Client Sample ID: Collection Date: Date Received:			-7 4/2011 8:40:00 AM 5/2011
Lab ID:	1103962-07					Matrix:	so	
Analyses		Result	Qual	MDL	PQL	Units		DF Date Analyzed
CAS #	EPA METHOD 300.0: ANIONS					<u></u>		Analyst: SRM
16887-00-	6 Chloride	260		7.9	30	mg/Kg	20	4/1/2011 5:47:43 PM
CAS#	EPA METHOD 8015B: DIESEL R	ANGE ORG	3					Analyst: JB
TPH-DRO	Diesel Range Organics (DRO)	1500		43	100	mg/Kg	10	4/1/2011 1:23:20 AM
1 <b>17-84-0</b>	Surr: DNOP	0	S	0	81:8-129	%REC	10	4/1/2011 1:23:20 AM
CAS#	EPA METHOD 8015B: GASOLIN	E RANGE			(SW5	i035)		Analyst: NSB
TPH-GRO	Gasoline Range Organics (GRO)	20	J	8.0	25	mg/Kg	5	3/30/2011 6:04:23 PM
460-00-4	Surr: BFB	113		0	89.7-125	%REC	5	3/30/2011 6:04:23 PM
CAS #	EPA METHOD 8021B: VOLATILE	S			(SW6	i035)		Analyst: NSB
71-43-2	Benzene	ND		0.019	0.25	mg/Kg	5	3/30/2011 6:04:23 PM
108-88-3	Toluene	ND		0.023	0.25	mg/Kg	5	3/30/2011 6:04:23 PM
100-41-4	<ul> <li>Ethylbenzene</li> </ul>	0.023	J	0.023	0.25	mg/Kg	5	3/30/2011 6:04:23 PM
1330-20-7	Xylenes, Total	0.25	J	0.069	0.50	mg/Kg	5	3/30/2011 6:04:23 PM
460-00-4	Surr: 4-Bromofluorobenzene	107		0	85,3-139	%REC	5	3/30/2011 6:04:23 PM

Date: 11-Apr-11

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CLIENT	: Southwest Geoscience				Clie	ent Sample ID:	TS	-8		
Lab Ord	Lab Order: 1103962				Collection Date: 3 Date Received: 3		3/2	3/24/2011 8:50:00 AM		
Project:       S. Carlsbad Compressor S         Lab ID:       1103962-08         Analyses		tation					3/2	5/2011		
					Matrix:			SOIL		
		Result	Qual	MDL	PQL	Units		DF Date Analyzed		
CAS #	EPA METHOD 300.0: ANIONS							Analyst: SRM		
16887-00-6	5 Chloride	350		7.9	30	mg/Kg	20	4/1/2011 6:57:22 PM		
CAS #	EPA METHOD 8015B: DIESEL RA		3					Analyst: <b>JB</b>		
TPH-DRO	Diesel Range Organics (DRO)	1500		43	100	mg/Kg	10	4/1/2011 1:57:28 AM		
117-84-0	Surr: DNOP	0	S	0	81.8-129	%REC	10	4/1/2011 1:57:28 AM		
CAS #	EPA METHOD 8015B: GASOLINE	RANGE			(SW5	i035)		Analyst: NSB		
TPH-GRO	Gasoline Range Organics (GRO)	47		8.0	25	mg/Kg	5	3/30/2011 6:33:19 PM		
460-00-4	Surr: BFB	157	S	0	89.7-125	%REC	5	3/30/2011 6:33:19 PM		
CAS#	EPA METHOD 8021B: VOLATILE	S			(SW5	035)		Analyst: NSB		
71- <b>43-</b> 2	Benzene	ND		0.019	0.25	mg/Kg	5	3/30/2011 6:33:19 PM		
108-88-3	Toluene	0.039	J	0.023	0.25	mg/Kg	5	3/30/2011 6:33:19 PM		
100-41-4	Ethylbenzene	0.069	J	0.023	0.25	mg/Kg	5	3/30/2011 6:33:19 PM		
1330-20-7	Xylenes, Total	0.90		0.069	0.50	mg/Kg	5	3/30/2011 6:33:19 PM		
460-00-4	Surr: 4-Bromofluorobenzene	112		0	85.3-139	%REC	5	3/30/2011 6:33:19 PM		

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

B - Analyte detected in the associated Method Blank

\* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Page 8 of 20

Date: 11-Apr-11

Hall E	<b>Environmental Analysis</b> 1	Labora	tory,	Inc.		Da	te:	11-Apr-11	
CLIENT Lab Ord Project: Lab ID:	<ul> <li>Southwest Geoscience</li> <li>1103962</li> <li>S. Carlsbad Compressor St</li> <li>1103962-09</li> </ul>	ation			Clie C J	ent Sample ID: ollection Date: Date Received: Matrix:	TS 3/2 3/2 SO	-9 4/2011 8:55:00 AM 5/2011 IL	
Analyses	}	Result	Qual	MDL	PQL	Units		DF Date Analyzed	
CAS # 16887-00-	EPA METHOD 300.0: ANIONS 6 Chloride	410		7.9	30	mg/Kg	20	Analyst: <b>SRM</b> 4/1/2011 7:32:11 PM	
CAS #	EPA METHOD 8015B: DIESEL RA	NGE ORG	}					Analyst: JB	
TPH-DRO	Diesel Range Organics (DRO)	650		43	100	mg/Kg	10	4/1/2011 2:31:36 AM	
117-84-0	Surr: DNOP	. 0	S	0	81.8-129	%REC	10	4/1/2011 2:31:36 AM	
CAS #	EPA METHOD 8015B: GASOLINE	RANGE			(SW5	i035)		Analyst: NSB	
TPH-GRO	Gasoline Range Organics (GRO)	ND		8.0	25	mg/Kg	5	3/30/2011 7:02:09 PM	
460-00-4	Surr: BFB	95.8		. 0	89.7-125	%REC	5	3/30/2011 7:02:09 PM	
CAS #	EPA METHOD 8021B: VOLATILES	8	•		(SW5	i035)		Analyst: NSB	
71-43-2	Benzene	ND		0.019	0.25	mg/Kg	5	3/30/2011 7:02:09 PM	
108-88-3	Toluene	ND		0.023	0.25	mg/Kg	5	3/30/2011 7:02:09 PM	
100-41-4	Ethylbenzene	0.023	J	0.023	0.25	mg/Kg	5	3/30/2011 7:02:09 PM	
1330-20-7	Xylenes, Total	ND		0.069	0.50	mg/Kg	5	3/30/2011 7:02:09 PM	
460-00-4	Surr: 4-Bromofluorobenzene	108		0	85.3-139	%REC	5	3/30/2011 7:02:09 PM	

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

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S - Spike Recovery outside accepted recovery limits

Date: 11-Apr-11

R - RPD outside accepted recovery limits

E - Value above quantitation range

Page 9 of 20

			<u></u>						
CLIENT	: Southwest Geoscience			······	Clie	ent Sample ID:	TS	-10	
Lab Ord	ler: 1103962				С	ollection Date:	Date: 3/24/2011 9:00:00 AM		
<b>Project:</b>	S. Carlsbad Compressor Sta	Station			Date Received: 3/25/2011			5/2011	
Lab ID:	1103962-10					Matrix:	IL		
Analyses		Result	Qual	MDL	PQL	Units		DF Date Analyzed	
CAS #	EPA METHOD 300.0: ANIONS							Analyst: SRM	
16887-00-	6 Chloride	110		7.9	30	mg/Kg	20	4/1/2011 10:26:17 PM	
CAS#	EPA METHOD 8015B: DIESEL RA		6					Analyst: JB	
TPH-DRO	Diesel Range Organics (DRO)	1000		43	100	mg/Kg	10	4/1/2011 3:05:45 AM	
117 <b>-</b> 84-0	Surr: DNOP	0	S	0	81.8-129	%REC	10	4/1/2011 3:05:45 AM	
CAS#	EPA METHOD 8015B: GASOLINE	RANGE			(SW5	6035)		Analyst: NSB	
TPH-GRO	Gasoline Range Organics (GRO)	ND		80	250	mg/Kg	50	3/30/2011 7:31:01 PM	
460-00-4	Surr: BFB	89.9		0	89.7-125	%REC	50	3/30/2011 7:31:01 PM	
CAS#	EPA METHOD 8021B: VOLATILES				(SW5	035)		Analyst: NSB	
71-43-2	Benzene	ND		0.19	2.5	mg/Kg	50	3/30/2011 7:31:01 PM	
108-88-3	Toluene	ND		0.23	2.5	mg/Kg	50	3/30/2011 7:31:01 PM	
100-41-4	Ethylbenzene	ND		0.23	2.5	mg/Kg	50	3/30/2011 7:31:01 PM	
1330-20-7	Xylenes, Total	ND		0.69	5.0	mg/Kg	50	3/30/2011 7:31:01 PM	
460-00-4	Surr: 4-Bromofluorobenzene	105		0	85.3-139	%REC	50	3/30/2011 7:31:01 PM	

Qualifiers:

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B - Analyte detected in the associated Method Blank

\* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Date: 11-Apr-11

# Hall Environmental Analysis Laboratory Inc.

Page 10 of 20

CLIENT	: Southwest Geoscience				Clie	ent Sample ID	TS	TS-11		
Lab Order: 1103962			Collection Date:				3/2	4/2011 9:25:00 AM		
Project:	S. Carlsbad Compressor S	tation			Date Received:			3/25/2011		
Lab ID: 1103962-11					Matrix:			SOIL		
Analyses		Result	Qual	MDL	PQL	Units		DF Date Analyzed		
CAS #	EPA METHOD 300.0; ANIONS							Analyst: SRM		
16887-00-6	6 Chloride	160		7.9	30	mg/Kg	20	4/1/2011 11:01:05 PM		
CAS #	EPA METHOD 8015B: DIESEL RA	NGE ORG	;					Analyst: JB		
TPH-DRO	Diesel Range Organics (DRO)	1800		43	100	mg/Kg	10	4/1/2011 3:39:53 AM		
117-84-0	Surr: DNOP	0	S	0	81.8-129	%REC	10	4/1/2011 3:39:53 AM		
CAS #	EPA METHOD 8015B: GASOLINE	RANGE			(SW5	6035)		Analyst: NSB		
rph-gro	Gasoline Range Organics (GRO)	ND		80	250	mg/Kg	50	3/31/2011 1:17:15 AM		
160-00-4	Surr: BFB	89.6	S	0	89.7-125	%REC	50	3/31/2011 1:17:15 AM		
CAS #	EPA METHOD 8021B: VOLATILE	S			(SW5	035)		Analyst: NSB		
71-43-2	Benzene	ND		0.19	2.5	mg/Kg	50	3/31/2011 1:17:15 AM		
08-88-3	Toluene	ND		0.23	2.5	mg/Kg	50	3/31/2011 1:17:15 AM		
00-41-4	Ethylbenzene	ND		0.23	2.5	mg/Kg	50	3/31/2011 1:17:15 AM		
330-20-7	Xylenes, Total	ND		0.69	5.0	mg/Kg	50	3/31/2011 1:17:15 AM		
160-00-4	Surr: 4-Bromofluorobenzene	109		0	85.3-139	%REC	50	3/31/2011 1:17:15 AM		

Date: 11-Apr-11

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

B - Analyte detected in the associated Method Blank

\* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Page 11 of 20

CLIENT: Lab Orde	Southwest Geoscience 1103962				Clic	ent Sample I ollection Dat	D: TS- te: 3/2	TS-12 3/24/2011 9:30:00 AM		
Project: S. Carlsbad Compressor		tation			1	Date Received: 3/25/2011				
Lab ID:	1103962-12					Matri	Matrix: SOIL			
Analyses		Result	Qual	MDL	PQL	Units		DF Date Analyzed		
CAS #	EPA METHOD 300.0: ANIONS							Analyst: SRM		
16887-00-6	Chloride	160		7.9	30	mg/Kg	20	4/1/2011 11:35:54 PM		
CAS #	EPA METHOD 8015B: DIESEL RA		6					Analyst: JB		
TPH-DRO	Diesel Range Organics (DRO)	1400		43	100	mg/Kg	10	4/1/2011 4:14:01 AM		
117-84-0	Surr: DNOP	0	S	0	81.8-129	%REC	10	4/1/2011 4:14:01 AM		
CAS#	EPA METHOD 8015B: GASOLINE	RANGE			(SW5	6035)		Analyst: NSB		
TPH-GRO	Gasoline Range Organics (GRO)	ND		80	250	mg/Kg	50	3/31/2011 1:46:11 AM		
460-00-4	Surr: BFB	89.1	S	0	89.7-125	%REC	50	3/31/2011 1:46:11 AM		
CAS # I	EPA METHOD 8021B: VOLATILES	S			(SW5	035)		Analyst: NSB		
71-43-2	Benzene	ND		0.19	2.5	mg/Kg	50	3/31/2011 1:46:11 AM		
108-88-3	Toluene	ND		0.23	2.5	mg/Kg	50	3/31/2011 1:46:11 AM		
100-41-4 ,	Ethylbenzene	ND		0.23	2.5	mg/Kg	50	3/31/2011 1:46:11 AM		
1330-20-7	Xylenes, Total	ND		0.69	5.0	mg/Kg	50	3/31/2011 1:46:11 AM		
460-00-4	Surr: 4-Bromofluorobenzene	106		0	85.3-139	%REC	50	3/31/2011 1:46:11 AM		

Date: 11-Apr-11

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

B - Analyte detected in the associated Method Blank

\* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Page 12 of 20

CLIENT	: Southwest Geoscience				Clie	ent Sample	ID: TS-	13 1/2011 9:35:00 AM		
Project:	S. Carlsbad Compressor Sta	ation			Date Received:			3/25/2011		
Lab ID: 1103962-13 Analyses					Matrix: SOIL					
		Result	Qual	MDL	PQL Units			DF Date Analyzed		
CAS #	EPA METHOD 300.0: ANIONS				•			Analyst: SRM		
16887-00-0	6 Chloride	100		7.9	30	mg/Kg	20	4/2/2011 12:10:42 AM		
CAS #	EPA METHOD 8015B: DIESEL RA		3					Analyst: JB		
TPH-DRO	Diesel Range Organics (DRO)	1900		43	100	mg/Kg	10	4/1/2011 4:47:55 AM		
117-84-0	Surr: DNOP	0	S	0	81.8-129	%REC	10	4/1/2011 4:47:55 AM		
CAS#	EPA METHOD 8015B: GASOLINE	RANGE			(SW5	035)		Analyst: NSB		
TPH-GRO	Gasoline Range Organics (GRO)	ND		160	500	mg/Kg	100	3/31/2011 2:15:06 AM		
460-00-4	Surr: BFB	88.8	S	0	89.7-125	%REC	100	3/31/2011 2:15:06 AM		
CAS#	EPA METHOD 8021B: VOLATILES	;			(SW5	035)		Analyst: NSB		
71-43-2	Benzene	ND		0.37	5.0	mg/Kg	100	3/31/2011 2:15:06 AM		
108-88-3	Toluene	ND		0.46	5.0	mg/Kg	100	3/31/2011 2:15:06 AM		
100-41 <b>-</b> 4	Ethylbenzene	ND		0.45	5.0	mg/Kg	100	3/31/2011 2:15:06 AM		
1330-20-7	Xylenes, Total	ND		1.4	10	mg/Kg	100	3/31/2011 2:15:06 AM		
460-00-4	Surr: 4-Bromofluorobenzene	107		0	85.3-139	%REC	100	3/31/2011 2:15:06 AM		

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

B - Analyte detected in the associated Method Blank

\* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Page 13 of 20

Date: 11-Apr-11

CLIENT	: Southwest Geoscience				Clie	ent Sample I	D: TS	-14
Lab Ord	ler: 1103962		•		С	ollection Dat	te: 3/2	4/2011 9:45:00 AM
Project:	S. Carlsbad Compressor S	Station			]	Date Receive	d: 3/2	5/2011
Lab ID:	1103962-14					Matri	x: SO	IL
Analyses	· · · · · · · · · · · · · · · · · · ·	Result	Qual	MDL	PQL	Units		DF Date Analyzed
CAS #	EPA METHOD 300.0: ANIONS							Analyst: SRM
16887-00-	6 Chloride	210		7.9	30	mg/Kg	20	4/3/2011 8:31:19 PM
CAS#	EPA METHOD 8015B: DIESEL R		5	-				Analyst: JB
TPH-DRO	Diesel Range Organics (DRO)	1100		43	100	mg/Kg	10	4/1/2011 5:21:49 AM
11 <b>7-84</b> -0	Surr: DNOP	0	S	0	81.8-129	%REC	10	4/1/2011 5:21:49 AM
CAS#	EPA METHOD 8015B: GASOLINI	E RANGE			(SW5	035)		Analyst: NSB
TPH-GRO	Gasoline Range Organics (GRO)	ND		80	250	mg/Kg	50	3/31/2011 2:43:57 AM
460-00-4	Surr: BFB	89.4	S	0	89.7-125	%REC	50	3/31/2011 2:43:57 AM
CAS#	EPA METHOD 8021B: VOLATILE	s			(SW5	035)		Analyst: NSB
71-43 <b>-</b> 2	Benzene	ND		0.19	2.5	mg/Kg	50	3/31/2011 2:43:57 AM
108-88-3	Toluene	ND		0.23	2.5	mg/Kg	50	3/31/2011 2:43:57 AM
100-41-4	Ethylbenzene	ND		0.23	2.5	mg/Kg	50	3/31/2011 2:43:57 AM
1330-20-7	Xylenes, Total	ND		0.69	5.0	mg/Kg	50	3/31/2011 2:43:57 AM
460-00-4	Surr: 4-Bromofluorobenzene	109		0	85.3-139	%REC	50	3/31/2011 2:43:57 AM

Date: 11-Apr-11

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

B - Analyte detected in the associated Method Blank

\* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Page 14 of 20

				<u> </u>						
CLIENT	Southwest Geoscience				<b>Client Sample 1D:</b>			TS-15		
Lab Ord	er: 1103962				C	ollection Date:	3/2	4/2011 9:50:00 AM		
<b>Project:</b>	S. Carlsbad Compressor S	S. Carlsbad Compressor Station					3/25/2011			
Lab ID:	1103962-15					Matrix:	SO	IL		
Analyses		Result	Qual	MDL	PQL	Units		DF Date Analyzed		
CAS #	EPA METHOD 300.0: ANIONS							Analyst: SRM		
16887-00-0	3 Chloride	210		7.9	30	mg/Kg	20	4/2/2011 1:55:10 AM		
CAS #	EPA METHOD 8015B: DIESEL RA	ANGE ORG	i					Analyst: JB		
TPH-DRO	Diesel Range Organics (DRO)	2400		43	100	mg/Kg	10	4/1/2011 8:14:53 AM		
117-84-0	Surr: DNOP	0	S	0	81.8-129	%REC	10	4/1/2011 8:14:53 AM		
CAS #	EPA METHOD 8015B: GASOLINE	Range Organics (DRO)         2400           r: DNOP         0         S           THOD 8015B: GASOLINE RANGE           Ine Range Organics (GRO)         160			(SW5035)			Analyst: NSB		
TPH-GRO	Gasoline Range Organics (GRO)	160	J	80	250	mg/Kg	50	3/31/2011 3:12:44 AM		
460-00-4	Surr: BFB	90.3		. 0	89.7-125	%REC	50	3/31/2011 3:12:44 AM		
CAS #	EPA METHOD 8021B: VOLATILE	s			(SW5035)			Analyst: NSB		
71-43-2	Benzene	ND		0.19	2.5	mg/Kg	50	3/31/2011 3:12:44 AM		
108-88-3	Toluene	ND		0.23	2.5	mg/Kg	50	3/31/2011 3:12:44 AM		
100-41-4	Èthylbenzene	ND		0.23	2.5	mg/Kg	50	3/31/2011 3:12:44 AM		
1330-20-7	Xylenes, Total	ND		0.69	5.0	mg/Kg	50	3/31/2011 3:12:44 AM		
460 <b>-00</b> -4	Surr: 4-Bromofluorobenzene	108		0	85.3-139	%REC	50	3/31/2011 3:12:44 AM		

Date: 11-Apr-11

Qualifiers:

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ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

B - Analyte detected in the associated Method Blank

\* - Value exceeds Maximum Contaminant Level

- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits
- E Value above quantitation range

Page 15 of 20

CLIENT	: Southwest Geoscience				Clie	ent Sample ID:	TS	TS-16	
Lab Ord	er: 1103962	1103962					3/24/2011 9:55:00 AM		
Project: S. Carlsbad Compres		tation			Date Received:		3/25/2011		
Lab ID:	1103962-16					Matrix:	SOIL		
Analyses		Result	Quai	MDL	PQL	Units	DF Date Analyzed		
CAS #	EPA METHOD 300.0: ANIONS							Analyst: SRM	
16887-00-6	6 Chloride	230		7.9	30	mg/Kg	20	4/2/2011 2:29:59 AM	
CAS#	EPA METHOD 8015B: DIESEL RA		1					Analyst: JB	
TPH-DRO	Diesel Range Organics (DRO)	1900		43	100	mg/Kg	10	4/1/2011 3:54:49 PM	
117-84-0	Surr: DNOP	0	S	Ŏ	81.8-129	%REC	10	4/1/2011 3:54:49 PM	
CAS#	EPA METHOD 8015B: GASOLINE RANGE				(SW5035)		Analyst: NSB		
TPH-GRO	Gasoline Range Organics (GRO)	210	J	80	250	mg/Kg	50	3/31/2011 3:41:35 AM	
460-00-4	Surr: BFB	89.1	S	0	89.7-125	%REC	50	3/31/2011 3:41:35 AM	
CAS #	A METHOD 8021B: VOLATILES		(SW5035)		Analyst: NSB				
71-43 <b>-</b> 2	Benzene	ND		0.19	2.5	mg/Kg	50	3/31/2011 3:41:35 AM	
108-88-3	Toluene	ND		0.23	2.5	mg/Kg	50	3/31/2011 3:41:35 AM	
100-41-4	Ethylbenzene	ND		0.23	2.5	mg/Kg	50	3/31/2011 3:41:35 AM	
1330-20-7	Xylenes, Total	ND		0.69	5.0	mg/Kg	50	3/31/2011 3:41:35 AM	
460-00-4	Surr: 4-Bromofluorobenzene	108		0	85.3-139	%REC	50	3/31/2011 3:41:35 AM	

Date: 11-Apr-11

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

B - Analyte detected in the associated Method Blank

\* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Page 16 of 20

CLIENT:Southwest GeoscienceLab Order:1103962Project:S. Carlsbad Compressor St		Station			<b>Client Sample ID:</b>		TS-17			
					С	Collection Date:		3/24/2011 10:00:00 AM		
					Date Received:		3/25/2011			
Lab ID:	1103962-17					Matrix:	x: SOIL			
Analyses		Result	Qual	MDL	PQL	Units	DF Date Analyzed			
CAS #	EPA METHOD 300.0: ANIONS							Analyst: SRM		
16887-00-0	5 Chloride	320	•	7.9	30	mg/Kg	20	4/2/2011 3:04:48 AM		
CAS #	EPA METHOD 8015B: DIESEL RA	NGE ORG	<b>i</b> .					Analyst: JB		
TPH-DRO	Diesel Range Organics (DRO)	1200		43	100	mg/Kg	10	4/1/2011 8:49:17 AM		
117-84-0	Surr: DNOP	0	S	0	81.8-129	%REC	10	4/1/2011 8:49:17 AM		
CAS #	EPA METHOD 8015B: GASOLINE	METHOD 8015B: GASOLINE RANGE			(SW5035)		Analyst: NSB			
TPH-GRO	Gasoline Range Organics (GRO)	ND		16	50	mg/Kg	10	3/31/2011 4:10:26 AM		
460-00-4	Sun: BFB	90.5		0	89.7-125	%REC	10	3/31/2011 4:10:26 AM		
CAS #	EPA METHOD 8021B: VOLATILES	5			(SW5	035)		Analyst: NSB		
71-43-2	Benzene	ND		0.037	0.50	mg/Kg	10	3/31/2011 4:10:26 AM		
108-88-3	Toluene	ND		0.046	0.50	mg/Kg	10	3/31/2011 4:10:26 AM		
100-41-4	Ethylbenzene	ND		0.045	0.50	mg/Kg	10	3/31/2011 4:10:26 AM		
1330-20-7	<ul> <li>Xylenes, Total</li> </ul>	ND		0.14	1.0	mg/Kg	10	3/31/2011 4:10:26 AM		
460-00-4	Surr: 4-Bromofluorobenzene	107		0	85.3-139	%REC	10	3/31/2011 4:10:26 AM		

Date: 11-Apr-11

Qualiflers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

\* - Value exceeds Maximum Contaminant Level

- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits
- E Value above quantitation range

Page 17 of 20
CLIENT	: Southwest Geoscience				Clie	ent Sample ID:	TS	-18
Lab Ord	er: 1103962				C	ollection Date:	3/2	4/2011 10:05:00 AM
Project:	S. Carlsbad Compressor St	ation			1	Date Received:	3/2	5/2011
Lab ID:	1103962-18					Matrix:	SO	IL
Analyses		Result	Qual	MDL	PQL	Units		DF Date Analyzed
CAS #	EPA METHOD 300.0: ANIONS							Analyst: SRM
16887-00-6	5 Chloride	280		7.9	30	mg/Kg	20	4/2/2011 3:39:37 AM
CAS #	EPA METHOD 8016B: DIESEL RA	NGE ORG	;					Analyst: JB
TPH-DRO	Diesel Range Organics (DRO)	2800		43	100	mg/Kg	10	4/1/2011 9:23:40 AM
117-84-0	Surr: DNOP	0	S	0	81.8-129	%REC	10	4/1/2011 9:23:40 AM
CAS #	EPA METHOD 8015B: GASOLINE	RANGE			(SW5	035)		Analyst: NSB
TPH-GRO	Gasoline Range Organics (GRO)	ND		80	250	mg/Kg	50	3/31/2011 10:22:41 AM
460-00-4	Surr: BFB	90.6		0	89.7-125	%REC	50	3/31/2011 10:22:41 AM
CAS #	EPA METHOD 8021B: VOLATILES	6			(SW5	035)		Analyst: NSB
71-43-2	Benzene	ND		0.19	2.5	mg/Kg	50	3/31/2011 10:22:41 AM
108-88-3	Toluene	ND		0.23	2.5	mg/Kg	50	3/31/2011 10:22:41 AM
100-41-4	Ethylbenzene	ND		0.23	2.5	mg/Kg	50	3/31/2011 10:22:41 AM
1330-20-7	Xylenes, Total	ND		0.69	5.0	mg/Kg	50	3/31/2011 10:22:41 AM
460-00-4	Surr: 4-Bromofluorobenzene	110		0	85.3-139	%REC	50	3/31/2011 10:22:41 AM

Date: 11-Apr-11

Qualifiers:

ND - Not Detected at the Reporting Limit

- J Analyte detected below quanititation limits
- B Analyte detected in the associated Method Blank
- \* Value exceeds Maximum Contaminant Level
- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits
- E Value above quantitation range

Page 18 of 20

CLIENT:	Southwest Geoscience				Clie	ent Sample ID:	TS	-19
Lab Order:	1103962				С	ollection Date:	3/2	4/2011 10:10:00 AM
Project:	S. Carlsbad Compressor St	ation			1	Date Received:	3/2	5/2011
Lab ID:	1103962-19					Matrix:	SO	IL
Analyses		Result	Qual	MDL	PQL	Units		DF Date Analyzed
CAS# E	PA METHOD 300.0: ANIONS							Analyst: SRM
16887-00-6	Chloride	290		7.9	30	mg/Kg	20	4/2/2011 4:14:26 AM
CAS# E	PA METHOD 8015B: DIESEL RA	NGE ORG	i		ι			Analyst: <b>JB</b>
TPH-DRO	Diesel Range Organics (DRO)	2700		43	100	m <b>g/Kg</b>	10	4/1/2011 9:58:20 AM
117-84-0	Surr: DNOP	0	S	0	81.8-129	%REC	10	4/1/2011 9:58:20 AM
CAS # EI	PA METHOD 8015B: GASOLINE	RANGE			(SW5	035)		Analyst: NSB
TPH-GRO	Gasoline Range Organics (GRO)	ND		80	250	mg/Kg	50	3/31/2011 10:51:36 AM
460-00-4	Surr: BFB	90.5		0	89.7-125	%REC	50	3/31/2011 10:51:36 AM
CAS # EI	PA METHOD 8021B: VOLATILES	3			(SW5	035)		Analyst: NSB
71-43-2	Benzene	ND		0.19	2.5	mg/Kg	50	3/31/2011 10:51:36 AM
108-88-3	Toluene	ND		0.23	2.5	mg/Kg	50	3/31/2011 10:51:36 AM
100-41-4	Ethylbenzene	ND		0.23	2.5	mg/Kg	50	3/31/2011 10:51:36 AM
1330-20-7	Xylenes, Total	ND		0.69	5.0	mg/Kg	50	3/31/2011 10:51:36 AM
460-00-4	Surr: 4-Bromofluorobenzene	108		0	85.3-139	%REC	50	3/31/2011 10:51:36 AM

Date: 11-Apr-11

Qualiflers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

B - Analyte detected in the associated Method Blank

\* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Page 19 of 20

CLIENT:	Southwest Geoscience				Clie	ent Sample ID	: TS	-20
Lab Order:	1103962				С	ollection Date	: 3/2	4/2011 10:15:00 AM
Project:	S. Carlsbad Compressor St	ation			. ]	Date Received	: 3/2	5/2011
Lab ID:	1103962-20					Matrix	: SO	IL
Analyses		Result	Qual	MDL	PQL	Units		DF Date Analyzed
CAS # EPA	A METHOD 300.0: ANIONS							Analyst: SRM
16887-00-6	Chloride	230		7.9	30	mg/Kg	20	4/5/2011 5:10:43 AM
CAS # EPA	METHOD 8015B: DIESEL RA	NGE ORG	;					Analyst: JB
TPH-DRO	Diesel Range Organics (DRO)	2200		43	100	mg/Kg	10	4/1/2011 10:32:45 AM
1 <b>17-84-0</b>	Surr: DNOP	0	S	0	81.8-129	%REC	10	'4/1/2011 10:32:45 AM
CAS # EPA	METHOD 8015B: GASOLINE	RANGE			(SW5	i035)		Analyst: NSB
TPH-GRO (	Gasoline Range Organics (GRO)	ND		80	250	mg/Kg	50	3/31/2011 11:20:28 AM
460-00-4	Surr: BFB	90.0		0	89.7-125	%REC	50	3/31/2011 11:20:28 AM
CAS # EPA	METHOD 8021B: VOLATILES	6			(SW5	035)		Analyst: NSB
71-43-2 1	Benzene	ND		0.19	2.5	mg/Kg	50	3/31/2011 11:20:28 AM
108-88-3 -	Toluene	ND		0.23	2.5	mg/Kg	50	3/31/2011 11:20:28 AM
100-41-4	Ethylbenzene	ND		0.23	2.5	mg/Kg	50	3/31/2011 11:20:28 AM
1330-20-7 )	Xylenes, Total	ND		0.69	5.0	mg/Kg	50	3/31/2011 11:20:28 AM
460-00-4	Surr: 4-Bromofluorobenzene	108		0	85.3-139	%REC	50	3/31/2011 11:20:28 AM

Date: 11-Apr-11

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

B - Analyte detected in the associated Method Blank

\* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Page 20 of 20

# **QA/QC SUMMARY REPORT**

Client: S	outhwest Geoscience					•					
'roject: S	. Carlsbad Compresso	or Station			·				Work	Order:	1103962
Analyte	Result	Units	PQL	SPK V	a SPK ref	%Rec l	.owLimit H	lghLimit	%RPD	RPDLimit	Qual
fethod: EPA Meth	od 300.0: Anlons	· · ·			···						
Jample ID: MB-2617	0	MBLK				Batch ID:	26170	Analys	sis Date:	3/30/2011	7:34:25 PN
Chloride	ND	mg/Kg	1.5								
Jample ID: MB-2618	1	MBLK				Batch ID:	26181	Analys	is Date:	4/1/2011	1:05:26 PN
Shloride	ND	ma/Ka	1.5				· ·				
Sample ID: LCS-261	70	LCS				Batch ID:	26170	Analys	sis Date:	3/30/2011	7:61:50 PN
Chloride	14.08	ma/Ka	1.5	15	, O,	93.9	90	110			
Jample ID: LCS-261	81	LCS			-	Batch ID:	26181	Analys	sis Date:	4/1/2011	1:22:50 PN
Chloride	13.79	mg/Kg	1.5	15	0	91.9	90	110			
Nethod: EPA Metho	od 8015B: Diesel Range	organics									
Sample ID: MB-2615	8	MBLK				Batch ID:	26156	Analys	is Date:	3/31/2011	7:07:40 PN
Diesel Range Organics	(DRO) ND	mg/Kg	10								
Sample ID: LCS-2616	58	LCS				Batch ID:	26156	Analys	is Date:	4/1/2011	2:58:54 PN
Diesel Range Organics	(DRO) 38.38	ma/Ka	10	50	0	76.8	66.2	120			
Sample ID: LCSD-26	156	LCSD			-	Batch ID:	26156	Analys	is Date:	4/1/2011	3:30:28 PN
Diesel Range Organics	(DRO) 42.74	mg/Kg	10	50	0	85.5	66.2	120	10.7	14.3	
Method: EPA Metho	od 8015B: Gasoline Ra										
Sample ID: MB-26152	2	MBLK				Batch ID:	26152	Analys	is Date:	3/30/2011 1	0:53:08 PM
Gasoline Range Organi		ma/Ka	50					•			
Sample ID: 1 CS-2615	3	LCS	0.0			Batch ID:	26152	Analys	is Date:	3/30/2011 1	0:24:19 PM
Ganoline Benge Organi		malKa	5.0	25	2 62	08 /	89.8	124			
Gasonne Kange Organi		ingrig	5.0		2.02			124			
Method: EPA Metho Sample ID: 1103982-0	od 8021B: Volatiles DAAMSD	MSD				Batch ID:	26152	Analva	is Date:	3/30/2011 9	9:26:31 PM
Banzono	4 017	malka	0.25	1	0	102	67 2	113	5.02	14.2	
Tolugza	1.017	mg/Kg	0.25	1	0	102	82.1	116	0.02	14.5	
Ethvibenzene	1.000	mg/Kg	0.25	. 1	ů 0	107	67.9	127	1.77	14.4	
Kylenes, Total	3.410	ma/Ka	0.50	3	0.1429	109	60.6	134	0.861	12.6	
Sample ID: MB-26152	}	MBLK		•		Batch ID:	26152	Analys	is Date:	3/30/2011 10	):53:08 PM
Benzene	ND	ma/Ka	0.050					·			
Foluene	ND	ma/Ka	0.050								
Ethylbenzene	ND	mg/Kg	0.050								
(ylenes, Total	ND	mg/Kg	0.10								
Sample ID: LCS-2615	2	LCS				Batch ID:	26152	Analysi	s Date:	3/30/2011 9	):55:25 PM
Benzene	0.9810	mg/Kg	0.050	1	0.0137	96.7	83.3	107			
oluene	1.075	mg/Kg	0.050	1	0.0099	106	74.3	115			
thylbenzene	1.133	mg/Kg	0.050	1	0.0056	113	80.9	122			
ylenes, Total	3.428	mg/Kg	0.10	. 3	0	1 <b>14</b>	85.2	123			
iample ID: 1103962-0	4AMS	MS				Batch ID:	26152	Analysi	s Date:	3/30/2011 8	1:57:36 PM
lenzene	0.9669	mg/Kg	0.25	1	0	96.7	67.2	113			
oluene	1.053	mg/Kg	0.25	1	0	105	62.1	116			
thylbenzene	1.089	mg/Kg	0.25	1	0	109	67.9	127			
ylenes, Total	3.440	mg/Kg	0.50	3	0.1429	110	60.6	134			

Qualifiers:

E Estimated value

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

H Holding times for preparation or analysis exceeded

NC Non-Chlorinated

R RPD outside accepted recovery limits

Sample	Rec	eipt Chi	ecklist			
Client Name SOUTHWEST GEOSCIENCE			Date Receive	d:		3/25/2011
Work Order Number 1103962			Received by	: LN	M	
Checklist completed by: Signature		Date	Sample ID la 3251	ibels chec	ked by:	Initials MG
Matrix: Carrier name:	<u>Fedi</u>	<u>Ex</u>				
Shipping container/cooler in good condition?	Yes	•	No	Not Pres	ent	
Custody seals intact on shipping container/cooler?	Yes	✓	No	Not Pres	ent	Not Shipped
Custody seals intact on sample bottles?	Yes		No .	N/A	~	
Chain of custody present?	Yes	✓	No			
Chain of custody signed when relinquished and received?	Yes	<b>V</b> -	No			
Chain of custody agrees with sample labels?	Yes		No			
Samples in proper container/bottle?	Yes	<b>√</b> !	No			
Sample containers intact?	Yes	✓	No			
Sufficient sample volume for indicated test?	Yes	✓	No			
All samples received within holding time?	Yes	<b>V</b>	No			Number of preserved
Water - VOA vials have zero headspace? No VOA vials subm	nitted	✓	Yes	No	•	pH:
Water - Preservation labels on bottle and cap match?	Yes		No	N/A	✓	
Water - pH acceptable upon receipt?	Yes		No	N/A		<2 >12 unless noted
Container/Temp Blank temperature?	5.	6° -	<6° C Acceptable	Ð		Dalow.
COMMENTS:		ľ	f given sufficient	time to co	ol.	

**Client contacted** 

#### Date contacted:

## Contacted by:

Comments:

**Corrective Action** 

Regarding:

### Person contacted

												•					•				CHAI	N OF	CUSTO	DY REC	ORD
Office Proje Sampl	E Location e Location ect Manage ler's Name	Jth Osco La Hydroge <u>Jer J.</u>	An An Ma	10 E No rto	esco	Laborato Address: <u>5+e</u> D Contact: Phone: PO/SO # Samplers	ry: <u>+1</u> <u>4901</u> <u>AI b</u> 505 : Signature	E A Hau 19Ve - 34	L uking rqve 5-3	; <u>л</u> , л 97	/Ε, ΙΜ 5	-	AN Re	QUE	STEC (0.00 % 00/0	IN- BUB BAL #BOIS	K (8/2)						Lab us Due Di Temp. c when re 1 2 Page_	e only ate: f coolers ceived (C°): 3 4 4 of e	s L
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SOUTHWEST GEOSCIENCE • 2351 W. Northwest Hwy., Suite 3321 • Dallas, Texas 75220 • Office: 214-350-5469 • Fax 214-350-2914

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### COVER LETTER

Wednesday, July 06, 2011

Joseph Martinez Southwest Geoscience 8829 Tradeway San Antonio, TX 78217

TEL: (210) 804-9922 FAX (210) 804-9944

RE: S Carlsbad CS

Dear Joseph Martinez:

Order No.: 1106995

Hall Environmental Analysis Laboratory, Inc. received 20 sample(s) on 6/23/2011 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued July 5, 2011.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Laboratory Manager

NM Lab # NM9425 NM0901 AZ license # AZ0682



4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109 505.345.3975 ■ Fax 505.345.4107 www.hallenvironmental.com

Date: 06-Jul-11

CLIENT:	Southwest Geoscience
Project:	S Carlsbad CS
Lab Order:	1106995

## **CASE NARRATIVE**

"S" flags denote that the surrogate was not recoverable due to sample dilution or matrix interferences.

#### **CLIENT:** Southwest Geoscience Client Sample ID: TS-1(R) Lab Order: 1106995 Collection Date: 6/20/2011 4:02:00 PM **Project:** S Carisbad CS Date Received: 6/23/2011 Matrix: SOIL Lab ID: 1106995-01 Analyses **Result Qual** MDL **PQL** Units **DF** Date Analyzed EPA METHOD 8015B: DIESEL RANGE ORG CAS# Analyst: JB TPH-DRO **Diesel Range Organics (DRO)** 1800 36 100 mg/Kg 10 6/29/2011 1:16:33 AM 117-84-0 Surr: DNOP 73.4-123 %REC 6/29/2011 1:16:33 AM 0 0 10 S

Hall Environmental Analysis Laboratory, Inc.

CAS#	EPA METHOD 8015B: GASOLINE	RANGE			(SW5	6035)		Analyst: RAA
TPH-GRO	Gasoline Range Organics (GRO)	<b>8</b> 1	J	30	94	mg/Kg	20	6/29/2011 2:40:58 PM
460-00-4	Surr: BFB	80.6		0	75.2-136	%REC	20	6/29/2011 2:40:58 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

- B Analyte detected in the associated Method Blank
- \* Value exceeds Maximum Contaminant Level
- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits
- E Value above quantitation range

# Hall Environmental Analysis Laboratory, Inc.

CLIENT:	Southwest Geoscience			Clic	ent Sample I	D: TS	3-2 ( R )	
Lab Orde	r: 1106995		• •	С	ollection Da	te: 6/2	20/2011 4:05:00 PM	
Project:	S Carlsbad CS		•	3	Date Receive	d: 6/2	23/2011	
Lab ID:	1106995-02				Matr	x: SC	DIL	
Analyses		Result Qua	MDL	PQL	Units		DF Date Analyzed	
CAS#	EPA METHOD 8015B: DIESEL RA	NGE ORG					Analyst: JB	
TPH-DRO	Diesel Range Organics (DRO)	560	3.4	9.9	mg/Kg	1	6/28/2011 5:10:51 PM	
117-84-0	Surr: DNOP	106	0	73.4-123	%REC	1	6/28/2011 5:10:51 PM	

			-			-		
CAS#	EPA METHOD 8015B: GASOLINE	RANGE		(SW5	035)		Analyst: RAA	
TPH-GRO	Gasoline Range Organics (GRO)	ND	16	49	mg/Kg	10	7/1/2011 1:39:14 AM	
460-00-4	Surr: BFB	91.3	0	75.2-136	%REC	10	7/1/2011 1:39:14 AM	

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

- \* Value exceeds Maximum Contaminant Level
- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits
- E Value above quantitation range

#### **CLIENT:** Southwest Geoscience Client Sample ID: TS-3 (R) 1106995 Lab Order: Collection Date: 6/20/2011 4:08:00 PM **Project:** S Carlsbad CS Date Received: 6/23/2011 Matrix: SOIL Lab ID: 1106995-03 **PQL** Units **DF** Date Analyzed Analyses Result Qual MDL CAS# EPA METHOD 300.0: ANIONS Analyst: SRM 16887-00-6 Chloride 290 7.9 20 6/29/2011 2:36:57 PM 30 mg/Kg CAS# EPA METHOD 8015B: DIESEL RANGE ORG Analyst: JB TPH-DRO 6/29/2011 11:02:17 AM Diesei Range Organics (DRO) 1400 36 100 ma/Ka 10 117-84-0 Surr: DNOP 0 S 0 73.4-123 %REC 10 6/29/2011 11:02:17 AM CAS# **EPA METHOD 8015B: GASOLINE RANGE** (SW5035) Analyst: RAA **TPH-GRO** Gasoline Range Organics (GRO) ND 93 mg/Kg 7/1/2011 2:09:17 AM 30 20 460-00-4 75.2-136 %REC Surr: BFB 89.8 7/1/2011 2:09:17 AM 0 20

Qualifiers:

ND - Not Detected at the Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

- \* Value exceeds Maximum Contaminant Level
- S Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Page 3 of 20

# Hall Environmental Analysis Laboratory, Inc.

CLIENT:	Southwest Geoscience				Client Sample ID:	TS-4(R)
Lab Order:	1106995				Collection Date:	6/20/2011 4:21:00 PM
Project:	S Carlsbad CS				Date Received:	6/23/2011
Lab ID:	1106995-04				Matrix:	SOIL
Analyses		Result	Qual	MDL	PQL Units	DF Date Analyzed

CAS#	EPA METHOD 8015B: DIESEL RAM	IGE ORG					Analyst: JB	
TPH-DRO	Diesel Range Organics (DRO)	820	3.4	9.9	mg/Kg	1	6/28/2011 6:20:54 PM	
117-84-0	Surr: DNQP	106	0	73.4-123	%REC	<u></u> 1	6/28/2011 6:20:54 PM	
CAS#	EPA METHOD 8015B: GASOLINE I	RANGE		(SW5	6035)		Analyst: RAA	
TPH-GRO	Gasoline Range Organics (GRO)	ND	15	47	mg/Kg	10	6/29/2011 4:11:23 PM	
460-00-4	Surr: BFB	78.1	0	75 2-136	%REC	10	6/29/2011 4·11·23 PM	

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

- B Analyte detected in the associated Method Blank
- \* Value exceeds Maximum Contaminant Level
- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits
- E Value above quantitation range

0/00/0044 0.55.50 DM

NDEO

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Client Sample ID: TS-5(R) Southwest Geoscience Lab Order: 1106995 Collection Date: 6/20/2011 4:17:00 PM **Project:** S Carlsbad CS Date Received: 6/23/2011 Matrix: SOIL Lab ID: 1106995-05 Analyses **Result** Qual MDL **PQL** Units **DF** Date Analyzed Analyst: JB CA\$ # EPA METHOD 8015B: DIESEL RANGE ORG TPH-DRO **Diesel Range Organics (DRO)** 14 6/28/2011 6:55:50 PM 3.4 9.8 mg/Kg 1

117-84-0	Suff: DNOP	90.7		0 73.4-123	WREC	3 (	0/20/2011 6:00:00 PM	
CAS #	EPA METHOD 8015B: GASOLINE F	RANGE		(SW5	035)		Analyst: RAA	
TPH-GRO	Gasoline Range Organics (GRO)	1.6	J	1.5 4.8	mg/Kg	1 (	6/29/2011 4:41:30 PM	
460-00-4	Surr: BFB	91.6		0 75.2-136	%REC	1 (	8/29/2011 4:41:30 PM	

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Qualiflers:

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A ... ANAA

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

- B Analyte detected in the associated Method Blank
- \* Value exceeds Maximum Contaminant Level
- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits
- E Value above quantitation range

Date: 06-Jul-11

CLIENT:	Southwest Geoscience	Client Sample ID: TS-6 (R)
Lab Order:	1106995	Collection Date: 6/20/2011 4:14:00 PM
Project:	S Carlsbad CS	Date Received: 6/23/2011
Lab ID:	1106995-06	Matrix: SOIL

Analyses		Result Qual	MDL	PQL	Units		DF Date Analyzed
CAS #	EPA METHOD 8015B: DIESEL RA	NGE ORG					Analyst: JB
TPH-DRO	Diesel Range Organics (DRO)	230	34	97	mg/Kg	10	6/29/2011 1:50:41 AM
117-84-0	Surr: DNOP	79.4	0	73.4-123	%REC	10	6/29/2011 1:50:41 AM
CAS#	EPA METHOD 8015B: GASOLINE	RANGE	•	(SWE	5035)		Analyst: RAA
TPH-GRO	Gasoline Range Organics (GRO)	ND	7.6	24	mg/Kg	5	6/29/2011 5:11:37 PM
460-00-4	Surr: BFB	90.5	0	75.2-136	%REC	5	6/29/2011 5:11:37 PM
CAS#	EPA METHOD 8021B: VOLATILES	8		(SW5	(035)		Analyst: RAA
71-43-2	Benzene	ND	0.018	0.24	mg/Kg	5	6/29/2011 5:11:37 PM
108-88-3	Toluene	ND	0.022	0.24	mg/Kg	5	6/29/2011 5:11:37 PM
100-41-4	Ethylbenzene	ND	0.021	0.24	mg/Kg	5	6/29/2011 5:11:37 PM
1330-20-7	Xylenes, Total	ND	0.065	0.47	mg/Kg	5	6/29/2011 5:11:37 PM
460-00-4	Surr: 4-Bromofluorobenzene	102	0	92-130	%REC	5	6/29/2011 5:11:37 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

- B Analyte detected in the associated Method Blank
- \* Value exceeds Maximum Contaminant Level
- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits

E - Value above quantitation range

## Hall Environmental Analysis Laboratory, Inc.

CLIENT:	Southwest Geoscience		Client Sample ID:	TS-7(R)
Lab Order:	1106995		Collection Date:	6/20/2011 4:11:00 PM
Project:	S Carlsbad CS		Date Received:	6/23/2011
Lab ID:	1106995-07		Matrix:	SOIL
Analyses		Result Qual MDL	PQL Units	DF Date Analyzed

CAS #	EPA METHOD 8015B: DIESEL RA	NGE ORG					Analyst: JB	
TPH-DRO	Diesei Range Organics (DRO)	56	3.5	9.9	mg/Kg	1	6/28/2011 7:30:44 PM	
117-84-0	Surr: DNOP	101	0	73.4-123	%REC	1	6/28/2011 7:30:44 PM	
CAS#	EPA METHOD 8015B: GASOLINE	RANGE		(SW5	035)		Analyst: RAA	
TPH-GRO	Gasoline Range Organics (GRO)	ND	1.6	5.0	mg/Kg	1	6/29/2011 5:41:48 PM	
460-00-4	Surr: BFB	105	0	75.2-136	%REC	1	6/29/2011 5:41:48 PM	

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

- B Analyte detected in the associated Method Blank
- \* Value exceeds Maximum Contaminant Level
- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits
- E Value above quantitation range

1

6/29/2011 6:11:54 PM

CLIENT	: Southwest Geoscience		<u> </u>	Clie	ent Sample	ID: TS	-8(R)
Lab Ord	er: 1106995			C	ollection Da	nte: 6/2	0/2011 4:24:00 PM
Project:	S Carlsbad CS			I	Date Receiv	ed: 6/2	3/2011
Lab ID:	1106995-08				Mati	rix: SO	IL
Analyses		Result Qual	MDL	PQL	Units		DF Date Analyzed
CAS #	EPA METHOD 8015B: DIESEL RA	NGE ORG	•	· ·	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		Analyst: JB
TPH-DRO	Diesel Range Organics (DRO)	ND	3.5	10	mg/Kg	1	6/28/2011 9:14:54 PM
117-84-0	Surr: DNOP	102	0	73.4-123	%REC	1	6/28/2011 9:14:54 PM
CAS #	EPA METHOD 8015B: GASOLINE	RANGE		(SW5	035)		Analyst: RAA
TPH-GRO	Gasoline Range Organics (GRO)	ND	1.6	5.1	mg/Kg	1	6/29/2011 6:11:54 PM

90.6

75.2-136 %REC

0

#### Qualifiers:

460-00-4

Surr: BFB

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

Hall Environmental Analysis Laboratory, Inc.

- B Analyte detected in the associated Method Blank
- \* Value exceeds Maximum Contaminant Level
- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits
- E Value above quantitation range

Page 8 of 20

CLIENT	C: Southwest Geoscience				Cile	ent Sample	D: TS	-9(R)
Lab Ord	ler: 1106995		•	Collection Date: 6/20/2011 4:27:00 PM				0/2011 4:27:00 PM
Project:	S Carlsbad CS			Date Received: 6/23/2011				
Lab ID;	1106995-09					Mati	tix: SO	IL
Analyses	}	Result	Qual	MDL	PQL	Units		DF Date Analyzed
CAS #	EPA METHOD 8015B: DIESEL RA	NGE ORG	 }					Analyst: JB
TPH-DRO	Diesel Range Organics (DRO)	270		35	100	mg/Kg	10	6/29/2011 2:24:47 AM
117-84-0	Surr: DNOP	0	S	0	73.4-123	%REC	10	6/29/2011 2:24:47 AM
CAS #	EPA METHOD 8015B: GASOLINE	RANGE			(SW5	035)		Analyst: RAA
TPH-GRO	Gasoline Range Organics (GRO)	ND		8.0	- 25	mg/Kg	5	6/29/2011 6:42:07 PM
460-00-4	Surr; BFB	87.0		0	75.2-136	%REC	5	6/29/2011 6:42:07 PM

Date: 06-Jul-11

#### Qualifiers:

ND - Not Detected at the Reporting Limit

- J Analyte detected below quanititation limits
- B Analyte detected in the associated Method Blank
- \* Value exceeds Maximum Contaminant Level
- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits
- E Value above quantitation range

CLIENT Lab Ord Project:	ENT:Southwest GeoscienceClient Sample JOrder:1106995Collection Daject:S Carlsbad CSDate ReceiveID:1106995-10Matr		ent Sample II ollection Date Date Received Matrix	ID: TS-10(R) ate: 6/20/2011 4:30:00 PM ved: 6/23/2011 trix: SOIL				
Analyses		Result	Qual	MDL	PQL	Units		DF Date Analyzed
CAS #	EPA METHOD 8015B: DIESEL RA	NGE ORG	;					Analyst: JB
TPH-DRO	Diesel Range Organics (DRO)	250		36	100	mg/Kg	10	6/29/2011 4:07:07 AM
117-84-0	Surr: DNOP	0	S	0	73.4-123	%REC	10	6/29/2011 4:07:07 AM
CAS#	EPA METHOD 8015B: GASOLINE	RANGE			(SW5	035)		Analyst: RAA
TPH-GRO	Gasoline Range Organics (GRO)	ND		8.4.	26	mg/Kg	5	6/29/2011 7:12:13 PM

0 75.2-136 %REC

91.1

# Hall Environmental Analysis Laboratory, Inc.

Date: 06-Jul-11

5

6/29/2011 7:12:13 PM

### Qualifiers:

460-00-4

Surr: BFB

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

- B Analyte detected in the associated Method Blank
- \* Value exceeds Maximum Contaminant Level
- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits

E - Value above quantitation range

# Hall Environmental Analysis Laboratory, Inc.

CLIENT	Southwest Geoscience				Clie	ent Sample	ID: TS-	-11( <b>R</b> )
Lab Ord	ler: 1106995				С	ollection Da	te: 6/2	0/2011 3:05:00 PM
<b>Project:</b>	S Carlsbad CS				J	Date Receiv	ed: 6/23	3/2011
Lab ID:	1106995-11					Matr	ix: SO	IL
Analyses		Result	Qual	MDL	PQL	Units		DF Date Analyzed
CAS #	EPA METHOD 8015B: DIESEL RA	ANGE ORG	3					Analyst: JB
TPH-DRO	Diesel Range Organics (DRO)	790		34	99	mg/Kg	10	6/29/2011 4:41:16 AM
117-84-0	Surr: DNOP	0	S	0	73.4-123	%REC	10	6/29/2011 4:41:16 AM

CAS #	EPA METHOD 8015B: GASOLINE	RANGE		(SW5	Analyst: RAA		
TPH-GRO	Gasoline Range Organics (GRO)	ND	16	50	mg/Kg	10	6/29/2011 7:42:13 PM
460-00-4	Surr: BFB	87.1	0	75.2-136	%REC	10	6/29/2011 7:42:13 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

- - Value exceeds Maximum Contaminant Level
- S Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Date: 06-Jul-11

Analyses		Result	Qual	MDL	PQL Units	DF Date Analyzed
Lab ID:	1106995-12				Matrix:	SOIL
Project:	S Carlsbad CS				Date Received:	6/23/2011
Lab Order:	1106995				<b>Collection Date:</b>	6/20/2011 3:08:00 PM
CLIENT:	Southwest Geoscience				<b>Client Sample ID:</b>	TS-12(R)

CAS #	EPA METHOD 8015B: DIESEL RA					Analyst: JB		
TPH-DRO	Diesel Range Organics (DRO)	440		34	97	mg/Kg	10	6/29/2011 5:15:09 AM
117-84-0	Surr: DNOP	0	S	0	73.4-123	%REC	10	6/29/2011 5:15:09 AM
<b>•</b> • • •					(			American DAA
CAS #	EPA METHOD 8015B: GASOLINE	RANGE			(SW5	035)		Analyst: RAA
<b>CAS #</b> TPH-GRO	EPA METHOD 8015B: GASOLINE Gasoline Range Organics (GRO)	RANGE ND		15	<b>(SW5</b> 48	035) mg/Kg	10	Analyst: RAA 6/29/2011 8:12:15 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

- B Analyte detected in the associated Method Blank
- \* Value exceeds Maximum Contaminant Level
- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits
- E Value above quantitation range

Date: 06-Jul-11

Lab ID:	1106995-13		 Matrix:	SOIL
Project:	S Carlsbad CS		Date Received:	6/23/2011
Lab Order:	1106995		<b>Collection Date:</b>	6/20/2011 3:11:00 PM
CLIENT:	Southwest Geoscience		Client Sample ID:	TS-13 (R)

2 8144 7 9 00		Thomas Ann array		• ~-	Unito		== ====		
CAS #	EPA METHOD 8015B: DIESEL RA	ANGE ORG					Analyst: JB		
TPH-DRO	Diesel Range Organics (DRO)	290	3.5	10	mg/Kg	1	6/28/2011 9:49:32 PM		
117-84-0	Surr: DNOP	117	0	73.4-123	%REC	1	6/28/2011 9:49:32 PM		
CAS #	EPA METHOD 8015B: GASOLINE RANG			(SW6	i035)		Analyst: RAA		
TPH-GRO	Gasoline Range Organics (GRO)	ND	7.7	24	mg/Kg	5	6/29/2011 8:42:28 PM		
460-00-4	Surr: BFB	97.9	0	75.2-136	%REC	5	6/29/2011 8:42:28 PM		
CAS#	EPA METHOD 8021B: VOLATILE	s		(SW5	i035)		Analyst: RAA		
71-43-2	Benzene	ND	0.018	0.24	mg/Kg	5	6/29/2011 8:42:28 PM		
108-88-3	Toluene	ND	0.022	0.24	mg/Kg	5	6/29/2011 8:42:28 PM		
100-41-4	Ethylbenzene	ND .	0.022	0.24	mg/Kg	5	6/29/2011 8:42:28 PM		
1330-20-7	Xylenes, Totai	ND	0.066	0.48	mg/Kg	5	6/29/2011 8:42:28 PM		
460-00-4	Surr: 4-Bromofluorobenzene	106	0	92-130	%REC	5	6/29/2011 8:42:28 PM		
							•		

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

- B Analyte detected in the associated Method Blank
- \* Value exceeds Maximum Contaminant Level
- S Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

10 6/29/2011 9:12:34 PM

# Hall Environmental Analysis Laboratory, Inc.

CLIENT Lab Ord	Southwest Geoscience 1106995				Clie	ent Sample ollection Da	ID: TS- ate: 6/2	-14 ( R ) 0/2011 3:14:00 PM			
<b>Project:</b>	S Carlsbad CS				Date Receiv			3/2011			
Lab ID:	1106995-14				Matrix: SOIL						
Analyses		Result	Qual	MDL	PQL	Units		DF Date Analyzed			
CAS#	EPA METHOD 8015B: DIESEL RA	NGE ORG	)					Analyst: JB			
TPH-DRO	Diesel Range Organics (DRO)	500		35	100	mg/Kg	10	6/29/2011 5:49:02 AM			
117-84-0	Surr: DNOP	0	S	0	73.4-123	%REC	10	6/29/2011 5:49:02 AM			
CAS#	EPA METHOD 8015B: GASOLINE	RANGE			(SW5	035)		Analyst: RAA			
TPH-GRO	Gasoline Range Organics (GRO)	ND		15	48	mg/Kg	10	6/29/2011 9:12:34 PM			

0

75.2-136 %REC

82.7

Qualifiers:

460-00-4

Surr: BFB

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

B - Analyte detected in the associated Method Blank

- \* Value exceeds Maximum Contaminant Level
- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits

E - Value above quantitation range

CLIENT: Southwest Geoscience Client Sample ID: TS-15(R) Lab Order: 1106995 Collection Date: 6/20/2011 3:17:00 PM **Project:** S Carlsbad CS Date Received: 6/23/2011 Matrix: SOIL Lab ID: 1106995-15 Result Qual **DF** Date Analyzed Analyses MDL **PQL** Units CAS # EPA METHOD 8015B: DIESEL RANGE ORG Analyst: JB TPH-DRO **Diesel Range Organics (DRO)** 430 3.6 10 mg/Kg 1 6/28/2011 10:24:24 PM 117-84-0 Surr: DNOP 110 ٥ 73.4-123 %REC 6/28/2011 10:24:24 PM 4 CAS# **EPA METHOD** Analyst: RAA

## Hall Environmental Analysis Laboratory, Inc.

#### Qualifiers:

**TPH-GRO** 

460-00-4

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

B - Analyte detected in the associated Method Blank

- \* Value exceeds Maximum Contaminant Level
- S Spike Recovery outside accepted recovery limits

Date: 06-Jul-11

6/30/2011 1:42:47 AM 6/30/2011 1:42:47 AM

- R RPD outside accepted recovery limits
- E Value above quantitation range

	110		Ū	10.4-120		•
A METHOD 8015B: GASOLINE F	(SW5035)					
Gasoline Range Organics (GRO)	17	J	7.3	23	mg/Kg	5
Surr: BFB	86.2		0	75.2-136	%REC	5

1

1

6/30/2011 2:12:49 AM

6/30/2011 2:12:49 AM

			·							
CLIENT	:	Southwest Geoscience			Clie	ent Sample	ID: TS	-16(R)		
Lab Orde	er:	1106995			C	ollection Da	nte: 6/2	0/2011 3:20:00 PM		
Project:	2	S Carlsbad CS		Date Received:				6/23/2011		
Lab ID: 1106995-16						Mati	rix: SO	IL		
Analyses			Result Quai	MDL	PQL	Units	•	DF Date Analyzed		
CAS #	EPA M	IETHOD 8015B: DIESEL R	ANGE ORG					Analyst: JB		
TPH-DRO	Die	sel Range Organics (DRO)	73	3.4	<b>9</b> .8	mg/Kg	1	6/28/2011 10:59:00 PM		
117-84-0	5	Surr: DNOP	105	0	73.4-123	%REC	1	6/28/2011 10:59:00 PM		
CAS#	EPA M	IETHOD 8015B: GASOLINI			(SW5	035)		Analyst: RAA		

1.5

0

4.6 mg/Kg

75.2-136 %REC

ND

95.3

Qualifiers:

**TPH-GRO** 

460-00-4

ND - Not Detected at the Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Gasoline Range Organics (GRO)

Surr: BFB

J - Analyte detected below quanititation limits

- B Analyte detected in the associated Method Blank
- \* Value exceeds Maximum Contaminant Level
- S Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Page 16 of 20

Date: 06-Jul-11

CLIENT:	Southwest Geoscience	Client Sample ID: TS-17 (R)					
Lab Order:	1106995				Collection Date:	6/20/2011 3:23:00 PM	
Project:	S Carlsbad CS				Date Received:	6/23/2011	
Lab ID:	1106995-17				Matrix:	SOIL	
Analyses		Result	Qual	MDL	PQL Units	DF Date Analyzed	

CAS #	EPA METHOD 8015B: DIESEL	RANGE ORG	i		·			Analyst: JB
TPH-DRO	Diesel Range Organics (DRO)	99		3.5	10	mg/Kg	1	6/29/2011 10:27:52 AM
117-84-0	Surr: DNOP	98.8		0	73.4-123	%REC	1	6/29/2011 10:27:52 AM
CAS#	EPA METHOD 8015B: GASOLI	NE RANGE			(SW5	035)		Analyst: RAA
TPH-GRO	Gasoline Range Organics (GRO	) 3.3	J	1.5	4.7	mg/Kg	<sup>.</sup> 1	6/30/2011 2:42:47 AM
460-00-4	Surr: BFB	105		0	75.2-136	%REC	1	6/30/2011 2:42:47 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

- B Analyte detected in the associated Method Blank
- \* Value exceeds Maximum Contaminant Level
- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits
- E Value above quantitation range

K

## Hall Environmental Analysis Laboratory, Inc.

Gasoline Range Organics (GRO)

Surr: BFB

CLIENT: Southwest Geoscience		Southwest Geoscience C			ent Sample I	D: TS	-18(R)
Lab Ord	ler: 1106995			С	ollection Dat	te: 6/2	20/2011 3:26:00 PM
Project: S Carlsbad CS Lab ID: 1106995-18 Analyses		ct: S Carlsbad CS		Date Received:		d: 6/2	3/2011
				Matrix:			NL
		Result Qual	MDL	PQL Units			DF Date Analyzed
CAS #	EPA METHOD 8015B: DIESEL R	ANGE ORG					Analyst: JB
TPH-DRO	Diesel Range Organics (DRO)	63	3.4	9.7	mg/Kg	1	6/28/2011 11:33:23 PM
117-84-0	Surr: DNOP	105	0	73.4-123	%REC	1	6/28/2011 11:33:23 PM
CAS#	EPA METHOD 8015B: GASOLINI	ERANGE		(SW5	i035)		Analyst: RAA

1.6

0

5.1 mg/Kg

75.2-136 %REC

ND

82.7

1 6/30/2011 3:12:54 AM 1 6/30/2011 3:12:54 AM

Qualifiers:

TPH-GRO

460-00-4

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

- B Analyte detected in the associated Method Blank
- \* Value exceeds Maximum Contaminant Level
- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits
- E Value above quantitation range

CLIENT:	Southwest Geoscience			Client Sample I	D: TS-19(R)
Lab Order:	1106995			Collection Dat	te: 6/20/2011 3:29:00 PM
Project:	S Carlsbad CS			Date Receive	<b>d:</b> 6/23/2011
Lab ID:	1106995-19			Matri	ix: SOIL
Analyses		Result Qual	MDL	PQL Units	DF Date Analyzed
CAS # EP	A METHOD 8015B: DIESEL R	ANGE ORG			Analyst: JB
TPH-DRO	Diesel Range Organics (DRO)	790	34	9.8 mo/Ka	1 6/29/2011 12-07-46 AM

Hall Environmental Analysis Laboratory, Inc.

117-84-0	Surr: DNOP	115	0	73.4-123	%REC	1	6/29/2011 12:07:46 AM	
CAS#	EPA METHOD 8015B: GASOLINE	RANGE		(SW5	035)		Analyst: RAA	
TPH-GRO	Gasoline Range Organics (GRO)	ND	16	49	mg/Kg	10	6/30/2011 3:42:55 AM	
460-00-4	Surr: BFB	89.6	0	75.2-136	%REC	10	6/30/2011 3:42:55 AM	

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

B - Analyte detected in the associated Method Blank

- \* Value exceeds Maximum Contaminant Level
- S Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Page 19 of 20

#### Southwest Geoscience **CLIENT:** Client Sample ID: TS-20(R) Lab Order: 1106995 Collection Date: 6/20/2011 3:29:00 PM S Carlsbad CS **Project:** Date Received: 6/23/2011 Matrix: SOIL Lab ID: 1106995-20 Result Qual MDL **PQL** Units **DF** Date Analyzed Analyses EPA METHOD 8015B: DIESEL RANGE ORG Analyst: JB CAS# TPH-DRO **Diesel Range Organics (DRO)** 72 3.5 10 mg/Kg 6/29/2011 12:42:10 AM 1

Hall Environmental Analysis Laboratory, Inc.

117-84-0	Surr: DNOP	100	0	73.4-123	%REC	1	6/29/2011 12:42:10 AM	
CAS#	EPA METHOD 8015B: GASOLINE	RANGE		(SW5	035)		~. Analyst: RAA	
TPH-GRO	Gasoline Range Organics (GRO)	ND	1.6	5.1	mg/Kg	1	6/30/2011 4:12:54 AM	
460-00-4	Surr: BFB	94.9	0	75.2-136	%REC	1	6/30/2011 4:12:54 AM	

Qualifiers:

ND - Not Detected at the Reporting Limit

- J Analyte detected below quanititation limits
- B Analyte detected in the associated Method Blank
- \* Value exceeds Maximum Contaminant Level
- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits
- E Value above quantitation range

Page 20 of 20

# **QA/QC SUMMARY REPORT**

Client: South	west Geoscience										
Project: S Carl	lsbad CS								Work	Order:	1106995
Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec L	.owLimit H	ighLimit	%RPD	RPDLim	it Qual
Method: EPA Method 30	00.0: Anions		_		·						
Sample ID: MB-27417		MBLK				Batch ID:	27417	Anaiya	iis Date:	6/29/2011	12:00:12 PM
Chloride	ND	mg/Kg	1.5								
Sample ID: LCS-27417		LCS				Batch ID:	27417	Analys	is Date:	6/29/2011	12:17:37 PM
Chloride	14.46	mg/Kg	1.5	15	0	96.4	90	110			
Method: EPA Method 80	)15B: Diesel Range	Organics									
Sample ID: MB-27380		MBLK				Batch ID:	27380	Analys	is Date:	<b>6/28/20</b> 11	I 3:26:09 PM
Diesel Range Organics (DR	O) ND	mg/Kg	10								
Sample ID: LCS-27380		LCS				Batch ID:	27.380	Analys	is Date:	6/28/2011	4:00:50 PM
Diesel Range Organics (DR	O) 54.24	mg/Kg	10	50	0	108	66.7	119			
Sample ID: LCSD-27380		LCSD				Batch ID:	27380	Analys	is Date:	6/28/2011	4:35:47 PM
Diesel Range Organics (DR	D) 54.58	mg/Kg	10	50	0	109	66.7	119	0.623	18.9	
Method: EPA Method 80	15B: Gasoline Rar	ae									
Sample ID: MB-27379		MBLK				Batch ID:	27379	Analys	is Date:	6/29/2011	2:14:40 AM
Gasoline Range Organics (G		mo/Ko	5.0								
Sample ID: LCS-27379		LCS	••••			Batch ID:	27379	Analys	is Date:	6/29/2011	1:14:28 AM
Gasoline Range Organics (G	RO) 30.45	mg/Kg	5.0	25	0	122	88.8	124			
Method: EPA Method 80	21B: Volatiles										
Sample ID: MB-27379		MBLK				Batch ID:	27379	Analys	is Date:	6/29/2011	2:14:40 AM
Benzene	ND	ma/Ka	0.050					-			
Toluene	ND	ma/Ka	0.050								
Ethylbenzene	ND	mg/Kg	0.050								
Xylenes, Total	ND	mg/Kg	0.10								
Sample ID: LCS-27379		LCS				Batch ID:	27379	Analysi	is Date:	6/30/2011	5:43:17 AM
Benzene	1.035	mg/Kg	0.050	1	0	104	83.3	107			
Toluene	0.9420	mg/Kg	0.050	1	0	94.2	74.3	115			
Ethylbenzene	1.020	mg/Kg	0.050	1	0	102	80.9	122			
Xylenes, Total	3.195	mg/Kg	0.10	3	0	107	85.2	123			
Sample ID: LCSD-27379		LCSD				Batch ID:	27379	Analysi	is Date:	6/30/2011	6:13:13 AM
Benzene	1.045	mg/Kg	0.050	1	0	104	83.3	107	0.885	15.6	
Toluene	0.9512	mg/Kg	0.050	1	0	95.1	74.3	115	0.972	19.2	
Ethylbenzene	1.018	mg/Kg	0.050	1	0	102	80.9	122	0.235	19.5	
Xylenes, Total	3.175	mg/Kg	0.10	3	0	106	85.2	123	0.628	17	

Qualifiers:

- E Estimated value
- J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

- H Holding times for preparation or analysis exceeded
- NC Non-Chlorinated
- R RPD outside accepted recovery limits

																				CHAIN OF CU	STODY RECORD
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		1		1605		1	TS-2 (	(2)	1	1					V						-2
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Γ	Π			1424			TS-8	(A)							1						-8.
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02 Matrix	Date	Time	CoEp	J.C Grab	dentifying M	arks of Sample	e(s) La	Depth	End Depth	VOA	A/G 1LL	250 ni	P/O	2	Prei 1	× /			$\lfloor$		_	· 	/	Lab	Sample	ID (Lab Us	e Only)	
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		1523		1	75-17	(R)		Ī	Γ		<u> </u>								1	Τ						-17	,	
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### COVER LETTER

Monday, September 12, 2011

Joseph Martinez Southwest Geoscience 8829 Tradeway San Antonio, TX 78217

TEL: (210) 804-9922 FAX (210) 804-9944

RE: S. Carlsbad CS

Dear Joseph Martinez:

Order No.: 1108B03

Hall Environmental Analysis Laboratory, Inc. received 8 sample(s) on 8/27/2011 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please do not hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Laboratory Manager

NM Lab # NM9425 NM0901 AZ license # AZ0682

> 4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109 505.345.3975 ■ Fax 505.345.4107 www.hallenvironmental.com

nvironmental Analysis l		Date: 12-Sep-11							
: Southwest Geoscience	<u></u>		Clie	ent Sample	ID: TS-	·1 (R2)			
er: 1108B03			C	ollection Da	ate: 8/24	4/2011 4:15:00 PM			
S. Carlsbad CS		Date Received: 8/27/2011							
1108B03-01				Mat	rix: SO	IL .			
	Result Qual	MDL	PQL	Units		DF Date Analyzed			
EPA METHOD 8015B: DIESEL RA	NGE ORG	, ,				Analyst: JB			
Diesel Range Organics (DRO)	570	3.6	10	mg/Kg	1	8/31/2011 5:24:59 AM			
Surr. DNOP	121	0	73.4-123	%REC	1	8/31/2011 5:24:59 AM			
EPA METHOD 8015B: GASOLINE	RANGE		(SW5	035)		Analyst: RAA			
Gasolíne Range Organics (GRO)	ND	16	50	mg/Kg	10	8/30/2011 4:12:33 PM			
Surr: BFB	93.4	0	75.2-136	%REC	10	8/30/2011 4:12:33 PM			
	<ul> <li>Southwest Geoscience</li> <li>Southwest Geoscience</li> <li>I 108B03</li> <li>Carlsbad CS</li> <li>1108B03-01</li> </ul> EPA METHOD 8015B: DIESEL RADIesei Range Organics (DRO) Surr: DNOP EPA METHOD 8015B: GASOLINE Gasoline Range Organics (GRO) Surr: BFB	Invironmental Analysis Laboratory, Southwest Geoscience er: I 108B03 S. Carlsbad CS I 108B03-01 Result Qual EPA METHOD 8015B: DIESEL RANGE ORG Diesei Range Organics (DRO) 570 Surr: DNOP 121 EPA METHOD 8015B: GASOLINE RANGE Gasoline Range Organics (GRO) ND Surr: BFB 83.4	Invironmental Analysis Laboratory, Inc.         :       Southwest Geoscience         er:       I 108B03         S. Carlsbad CS       1108B03-01         Result Qual MDL         EPA METHOD 8015B: DIESEL RANGE ORG         Diesei Range Organics (DRO)       570       3.6         Surr: DNOP       121       0         EPA METHOD 8015B: GASOLINE RANGE         Gasolíne Range Organics (GRO)       ND       16         Surr: BFB       83.4       0	Invironmental Analysis Laboratory, Inc.         :       Southwest Geoscience       Clie         er:       I 108B03       Cd         S. Carlsbad CS       I         1108B03-01       Result       Qual       MDL       PQL         EPA METHOD 8015B: DIESEL RANGE ORG       Jiange Organics (DRO)       570       3.6       10         Surr: DNOP       121       0       73.4-123       EPA METHOD 8015B: GASOLINE RANGE       (SW5         Gasolíne Range Organics (GRO)       ND       16       50         Surr: BFB       93.4       0       75.2-136	Invironmental Analysis Laboratory, Inc.         : Southwest Geoscience       Client Sample         er: I 108B03       Collection D         S. Carlsbad CS       Date Receiv         1 108B03-01       Mat         Result Qual MDL PQL Units         EPA METHOD 8015B: DIESEL RANGE ORG         Diesei Range Organics (DRO)       570       3.6       10 mg/Kg         Surr: DNOP       121       0       73.4-123       %REC         EPA METHOD 8015B: GASOLINE RANGE         Gasoline Range Organics (GRO)       ND       16       50 mg/Kg         Surr: BFB       83.4       0       75.2-136       %REC	Invironmental Analysis Laboratory, Inc.Date:Date:Client Sample ID:Southwest GeoscienceClient Sample ID:er:1108B03S. Carlsbad CSDate Received:8/21108B03-01Result Qual MDLPQL UnitsPQL UnitsEPA METHOD 8015B: DIESEL RANGE ORGDiesel Range Organics (DRO)570Surr: DNOP121073.4-123Gasolíne Range Organics (GRO)ND1650Surr: BFB93.4075.2-136%REC10			

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

B - Analyte detected in the associated Method Blank

\* - Value exceeds Maximum Contaminant Level

- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits
- E Value above quantitation range

Page 1 of 8

Hall E	Environmental Analysis I	Date: 12-Sep-11										
CLIENT	T: Southwest Geoscience				Clie	ent Sample	ID: TS-	-2(R2)				
Lab Ord	ler: 1108B03				С	ollection Da	ite: 8/24	4/2011 4:10:00 PM				
Project:	S. Carlsbad CS			Date Received: 8/27/2011								
Lab ID:	1108B03-02		,			Mati	rix: SO	IL				
Analyses	}	Result	Qual	MDL	PQL	Units	······································	DF Date Analyzed				
CAS #	EPA METHOD 8015B: DIESEL RA	NGE ORG	;					Analyst: JB				
TPH-DRO	Diesel Range Organics (DRO)	470		35	9 <b>9</b>	mg/Kg	10	8/31/2011 8:10:22 AM				
117-84-0	Surr: DNOP	0	S	0	73.4-123	%REC	10	8/31/2011 8:10:22 AM				
CAS #	EPA METHOD 8015B: GASOLINE	RANGE			(SW5	035)		Analyst: RAA				
TPH-GRO	Gasoline Range Organics (GRO)	ND		16	50	mg/Kg	10	8/30/2011 4:41:25 PM				
460-00-4	Surr: BFB	93.7		0	75.2-136	%REC	10	8/30/2011 4:41:25 PM				

Date: 12-Sep-11

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

B - Analyte detected in the associated Method Blank

\* - Value exceeds Maximum Contaminant Level

- S Spike Recovery outside accepted recovery limits
  - R RPD outside accepted recovery limits

E - Value above quantitation range

Page 2 of 8

Llan L								_				
CLIENT: Southwest Geoscience					Clie	ent Sample 1	D: TS	-3(R2)				
Lab Order: 1108B03 Project: S. Carlsbad CS					C	ollection Dat	te: 8/2	8/24/2011 4:05:00 PM				
					Ι	Date Receive	ed: 8/2	8/27/2011				
Lab ID:	1108B03-03			•	,	Matr	ix: SO	SOIL				
Analyses		Result	Qual	MDL	PQL	Units		DF Date Analyzed				
CAS #	EPA METHOD 8015B: DIESEL RA	NGE ORG	}		-			Analyst: JB				
TPH-DRO	Diesel Range Organics (DRO)	1200		36	100	mg/Kg	10	8/31/2011 8:44:31 AM				
117-84 <b>-</b> 0	Surr: DNOP	0	S	0	73.4-123	%REC	10	8/31/2011 8:44:31 AM				
CAS #	EPA METHOD 8015B: GASOLINE	RANGE			(SW5	035)		Analyst: RAA				
TPH-GRO	Gasoline Range Organics (GRO)	ND		16	50	mg/Kg	10	8/30/2011 5:10:18 PM				
460-00-4	Surr: BFB	94.4		0	75.2-136	%REC	10	8/30/2011 5:10:18 PM				

Date: 12-Sep-11

#### Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

- B Analyte detected in the associated Method Blank
- \* Value exceeds Maximum Contaminant Level
- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits
- E Value above quantitation range

Page 3 of 8
Hall E	Invironmental Analysis I	Laboratory,	Date: 12-Sep-11							
CLIENT	: Southwest Geoscience			Clie	ent Sample	ID: TS-	-4(R2)			
Lab Ord	er: 1108B03		Collection Date: 8/24/2011 4:20;00 PM							
Project: S. Carlsbad CS Date						Date Received: 8/27/2011				
Lab ID:	1108B03-04		Matrix: SOIL							
Analyses		Result Qual	MDL	PQL	Units		DF Date Analyzed			
CAS #	EPA METHOD 8015B: DIESEL RA	NGE ORG	······································				Analyst: JB			
TPH-DRO	Diesel Range Organics (DRO)	250	3.5	10	mg/Kg	1	8/31/2011 5:59:21 AM			
117-84-0	Surr: DNOP	123	0	73.4-123	%REC	<b>1</b> .	8/31/2011 5:59:21 AM			
CAS #	EPA METHOD 8015B: GASOLINE	RANGE		(SW5	5035)		Analyst: RAA			
TPH-GRO	Gasoline Range Organics (GRO)	ND	7.5	23	mg/Kg	5	8/30/2011 5;39:16 PM			
460-00-4	Surr: BFB	93.1	0	75.2-136	%REC	<u>`</u> 5	8/30/2011 5:39:16 PM			

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

- B Analyte detected in the associated Method Blank
- \* Value exceeds Maximum Contaminant Level
- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits

E - Value above quantitation range

Page 4 of 8

Date: 12-Sep-11

Hall E	Environmental Analysis I		Date: 12-Sep-11						
CLIENT	T: Southwest Geoscience			Cli	ent Sample 1	ID: TS-	11(R2)		
Lab Ord	ler: 1108B03			Ċ	ollection Da	ite: 8/24	4/2011 3:45:00 PM		
Project: S. Carlsbad CS				Date Received: 8/27/2011					
Lab ID:	1108B03-05				Matr	ix: SOI	L		
Analyses	}	Result Qual	MDL	PQL	Units	1	DF Date Analyzed		
CAS #	EPA METHOD 8015B: DIESEL RA	NGE ORG					Analyst: JB		
TPH-DRO	Diesel Range Organics (DRO)	350	3.6	10	mg/Kg	1	8/31/2011 7:36:30 AM		
117-84-0	Surr: DNOP	120	0	73.4-123	%REC	1	8/31/2011 7:36:30 AM		
CAS #	EPA METHOD 8015B: GASOLINE	RANGE		(SW5	5035)		Analyst: RAA		
TPH-GRO	Gasoline Range Organics (GRO)	ND	1.5	4.8	mg/Kg	1	8/30/2011 6:08:05 PM		
460-00-4	Surr: BFB	93.7	0	75.2-136	%REC	1	8/30/2011 6:08:05 PM		

Qualifiers:

- J Analyte detected below quantitation limits
- B Analyte detected in the associated Method Blank
- \* Value exceeds Maximum Contaminant Level
- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits
- E Value above quantitation range

Page 5 of 8

CLIENT	': Southwest Geoscience				Clie	ent Sample l	D: TS-	·19(R2)
Lab Ord	er: 1108B03				С	ollection Da	te: 8/2/	4/2011 3:50:00 PM
Project:	S. Carlsbad CS				I	Date Receive	ed: 8/2	7/2011
Lab ID:	1108B03-06					Matr	ix: SO	IL
Analyses		Result	Qual	MDL	PQL	Units		DF Date Analyzed
CAS #	EPA METHOD 8015B: DIESEL RA	NGE ORG	}					Analyst: JB
TPH-DRO	Diesel Range Organics (DRO)	330		34	98	mg/Kg	10	8/31/2011 9:18:46 AM
117-84-0	Surr: DNOP	. 0	S	0	73.4-123	%REC	10	8/31/2011 9:18:46 AM
CAS #	EPA METHOD 8015B: GASOLINE	RANGE			(SW5	035)		Analyst: RAA
TPH-GRO	Gasoline Range Organics (GRO)	ND		7.5	23	mg/Kg	5	8/30/2011 6:37:05 PM
460-00-4	Surr: BFB	94.2		0	75.2-136	%REC	5	8/30/2011 6:37:05 PM

Date: 12-Sep-11

#### Hall Environmental Analysis Laboratory, Inc.

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

B - Analyte detected in the associated Method Blank

\* - Value exceeds Maximum Contaminant Level

- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits
- E Value above quantitation range

Page 6 of 8

Hall <b>E</b>	Environmental Analysis I		Date: 12-Sep-11						
CLIENT Lab Ord Project: Lab ID:	<ul> <li>Southwest Geoscience</li> <li>1108B03</li> <li>S. Carlsbad CS</li> <li>1108B03-07</li> </ul>			Clic C 1	-1 4/2011 3:58:00 PM 7/2011 IL				
Analyses		Result Qual	MDL	PQL	PQL Units		DF Date Analyzed		
CAS # 16887-00-	EPA METHOD 300.0: ANIONS 6 Chloride	290	9.8	30	mg/Kg	20	Analyst: SRM 9/8/2011 4:10:35 PM		
CAS #	EPA METHOD 8015B: DIESEL RA	NGE ORĢ					Analyst: <b>JB</b>		
TPH-DRO	Diesel Range Organics (DRO)	55	3.5	10	mg/Kg	1	9/8/2011 11:44:33 AM		
117-84-0	Surr: DNOP	110	0	73.4-123	%REC	1	9/8/2011 11:44:33 AM		
CAS#	EPA METHOD 8015B: GASOLINE	RANGE		(SW5	5035)		Analyst: RAA		
TPH-GRO	Gasoline Range Organics (GRO)	ND	1.5	4.7	mg/Kg	1	9/7/2011 4:15:57 PM		
460-00-4	Surr: BFB	94.3	0	75.2-136	%REC	1	9/7/2011 4:15:57 PM		
CAS #	EPA METHOD 8021B: VOLATILES	;		(SW5	6035)		Analyst: RAA		
71-43-2	Benzene	ND	0.0035	0.047	mg/Kg	1	9/7/2011 4:15:57 PM		
108-88-3	Toluene	ND	0.0043	0.047	mg/Kg	1	9/7/2011 4:15:57 PM		
100-41-4	Ethylbenzene	ND	0.0043	0.047	mg/Kg	1	9/7/2011 4:15:57 PM		
1330-20-7	Xylenes, Total	ND	0.013	0.095	mg/Kg	1	9/7/2011 4:15:57 PM		
460-00-4	Surr: 4-Bromofluorobenzene	96.5	0	80-120	%REC	1	9/7/2011 4:15:57 PM		

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

B - Analyte detected in the associated Method Blank

\* - Value exceeds Maximum Contaminant Level

- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits

E - Value above quantitation range

Page 7 of 8

					·····			
CLIENT	': Southwest Geoscience				Clie	ent Sample ID:	VZ	-2
Lab Ord	er: 1108B03				С	ollection Date:	8/2	4/2011 4:33:00 PM
Project:	S. Carlsbad CS				J	Date Received:	8/2	7/2011
Lab D:	1108B03-08					Matrix:	SO	IL
Analyses		Result	Qual	MDL	PQL	Units		DF Date Analyzed
CAS #	EPA METHOD 300.0: ANIONS							Analyst: SRM
16887-00-0	6 Chloride	510		9.8	30	mg/Kg	20	9/9/2011 9:27:20 PM
CAS #	EPA METHOD 8015B: DIESEL RA		;					Analyst: JB
TPH-DRO	Diesel Range Organics (DRO)	4.8	J	3.4	9.8	mg/Kg	1	9/8/2011 12:29:22 PM
117-84-0	Surr: DNOP	117		0	73.4-123	%REC	1	9/8/2011 12:29:22 PM
CAS #	EPA METHOD 8015B: GASOLINE	RANGE			(SW5	i035)		Analyst: RAA
TPH-GRO	Gasoline Range Organics (GRO)	ND		1.6	4.9	mg/Kg	1	9/7/2011 4:44:50 PM
460-00-4	Surr: BFB	94.0		0	75. <b>2-136</b>	%REC	1	9/7/2011 4:44:50 PM
CAS #	EPA METHOD 8021B: VOLATILES	5			(SW5	i035)		Analyst: RAA
71-43-2	Benzene	ND		0.0036	0.049	mg/Kg	1	9/7/2011 4:44:50 PM
108-8 <b>8-</b> 3	Toluene	ND		0.0045	0.049	mg/Kg	1	9/7/2011 4:44:50 PM
100-41-4	Ethylbenzene	ND		0.0044	0.049	mg/Kg	1	9/7/2011 4:44:50 PM
1330-20-7	Xylenes, Total	ND		0.013	0.098	mg/Kg	1	9/7/2011 4:44:50 PM
460-00 <b>-4</b>	Surr: 4-Bromofluorobenzene	95.4		0	80-120	%REC	1	9/7/2011 4:44:50 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

J - Analyte detected below quanititation limits

B - Analyte detected in the associated Method Blank

\* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

Date: 12-Sep-11

R - RPD outside accepted recovery limits

E - Value above quantitation range

Page 8 of 8

# **QA/QC SUMMARY REPORT**

Project: Southwest S. Carlsba	d CS								Work	Order:	1108B03
Analyte	Result	Units	PQL	SPK Ve	a SPK ref	%Rec I	.owLimit H	ighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 300.0: Sample ID: MB-28356	Anions	MBLK				Batch ID:	28355	Analys	is Date:	9/8/2011	1:33:52 PM
Chloride Sample ID: LC <b>S-28356</b>	ND	mg/Kg LCS	1.5			Baich ID:	28356	Analys	is Date:	9/8/2011	1:51:17 PM
Chloride	14.04	mg/Kg	1.5	15	0	93.6	90	110		·	
Method: EPA Method 8016B Sample ID: MB-28229	: Diesel Range	organics MBLK				Batch ID:	28229	Analys	is Date:	8/30/2011	7:26:35 AM
Diesel Range Organics (DRO) Motor Oil Range Organics (MRO) Sample ID: MB-28334	ND ) ND	mg/Kg mg/Kg <i>MBLK</i>	10 50			Batch ID:	28334	Analysi	is Date:	9/8/2011	9:27:39 AM
Diesel Range Organics (DRO) Sample ID: LCS-28229	3.507	mg/Kg LCS	10			Batch ID:	28229	Analys	s Date:	8/30/2011	J 8:00:43 AM
Diesel Range Organics (DRO) Sample ID: LCS-28334	49.91	mg/Kg LCS	10	50	0	99.8 Batch ID:	66.7 <b>28334</b>	119 Analysi	s Date:	9/8/2011 1	0:01:46 AM
Diesel Range Organics (DRO) Sample ID: LCSD-28229	47.52	mg/Kg LCSD	10	50	3.507	88.0 Batch ID:	66.7 <b>28229</b>	119 Analysi	s Date:	8/30/2011	8:35:04 AM
Diesel Range Organics (DRO) Sample ID: LCSD-28334	45.86	mg/Kg LCSD	10	50	0	91.7 Batch ID:	66.7 <b>28334</b>	119 Analysi	8.48 s Date:	18.9 9/8/2011 1	D:36:11 AM
Diesel Range Organics (DRO)	44.83	mg/Kg	10	50	3.507	82.6	66.7	119	5.82	18.9	
Method: EPA Method 8015B: Sample ID: MB-28242	Gasoline Ran	ige MBLK				Batch ID:	28242	Analysi	s Date:	8/30/2011	1:19:05 PM
Gasoline Range Organics (GRO) Sample ID: MB-28320	ND	mg/Kg MBLK	5.0			Batch iD:	28320	Analysi	s Date:	9/7/2011	1:21:31 PM
Gasoline Range Organics (GRO) Sample ID: LCS-28242	ND	mg/Kg LCS	5.0			Batch ID:	28242	Analysi	s Date:	8/30/2011 1:	2:21:19 PM
Gasoline Range Organics (GRO) Sample ID: LCS-28320	27.11	mg/Kg LCS	5.0	25	٥	108 Batch ID:	86.4 28320	132 Analysi	s Date:	9/7/2011 12	2:23:44 PM
Gasoline Range Organics (GRO)	28.99	ma/Ka	5.0	25	0	116	86.4	132			

Qualifiers:

Ε Estimated value

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

н Holding times for preparation or analysis exceeded

NC Non-Chlorinated

R RPD outside accepted recovery limits

9

Page I

# **QA/QC SUMMARY REPORT**

Client:	Southwest Geoscience
	0 0 11 100

'roject: S. Carisba									Work	Order:	1108B03
Analyte	Result	Units	PQL	SPK V	a SPK ref	%Rec L	.owLimit H	ighLimlt	%RPD	RPDLimit	Qual
fethod: EPA Method 8021B:	Volatiles										
Sample ID: MB-28242		MBLK				Batch ID:	28242	Analysi	s Date:	8/30/2011	1:19:05 PM
Aethyl tert-butyl ether (MTBE)	ND	mg/Kg	0.10					•			
Benzene	0.01800	mg/Kg	0.050								J
loluene	ND	mg/Kg	0.050								
Ethylbenzene	ND	mg/Kg	0.050								
Kylenes, Total	ND	mg/Kg	0.10								
3ample ID: MB-28320		MBLK				Batch ID:	28320	Anaiysi	s Date:	9/7/2011	1:21:31 PM
Benzene	0.01481	mg/Kg	0.050								J
Toluene	ND	mg/Kg	0.050								
Ethylbenzene	ND	mg/Kg	0.050								
Xylenes, Total	ND	mg/Kg	0.10								
Sample 1D: LCS-28242		LCS				Batch ID:	28242	Analysi	s Date:	8/30/2011 1	2:50:14 PM
Methyl tert-bulyl ether (MTBE)	0.7279	mg/Kg	0.10	1	0	72.8	65.5	229			
Benzene	0.9453	mg/Kg	0.050	1	0.018	92.7	83.3	107			
Toluene	0.9752	mg/Kg	0.050	1	0	97.5	74.3	115			
Ethylbenzene	0.9760	mg/Kg	0.050	1	0	97.6	80.9	122			
Xylenes, Total	2.988	mg/Kg	0.10	3	0	99.6	85.2	123			
Sample ID: LCS-28320		LCS				Batch ID:	28320	Analysi	s Date:	9/7/2011 1	2:52:38 PM
Benzene	0.9209	mg/Kg	0.050	1	0.0148	90.6	83.3	107			
Foluene	0.9500	mg/Kg	0.050	· 1	0	95.0	74.3	115			
Ethylbenzene	0.9600	mg/Kg	0.050	1	0	96.0	80.9	122			
Kylenes, Total	2.926	mg/Kg	0.10	3	0	97.5	85.2	123			

Qualifiers:

E Estimated value

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

H Holding times for preparation or analysis exceededNC Non-Chlorinated

R RPD outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

S	ample Receipt C	hecklist		
Client Name SOUTHWEST GEOSCIENCE		Date Receiv	ed:	8/27/2011
Work Order Number 1108B03		Received I	oy: AMF	N -
A	Sla	Sample ID	labels checked by:	Ma
Checklist completed by:	- J Z J	<u></u>		initials.
J Y	<b>A</b>			
Matrix: Carrier	name: <u>fedEx</u>			
Shipping container/cooler in good condition?	Yes 🖌	No 🗌	Not Present	
Custody seals intact on shipping container/cooler?	Yes 🔽	No 🗌	Not Present	Not Shipped
Custody seals intact on sample bottles?	Yes 🗖	No 🗔	N/A 🗹	
Chain of custody present?	Yes 🗹	No 🗔		
Chain of custody signed when relinquished and received?	Yes 🛛 🗹	No 🗖		
Chain of custody agrees with sample labels?	Yes 🗹	No 🗌		
Samples in proper container/bottle?	Yes 🗹	No 🗌	•	
Sample containers intact?	Yes 🗹	No 🗖		
Sufficient sample volume for indicated test?	Yes 🗹	No 🗌		
All samples received within holding time?	Yes 🖌	No 🗔		Number of preserved
Water - VOA vials have zero headspace? No VOA via	als submitted	Yes 🗌	No 🗌	bottles checked for pH:
Water - Preservation labels on bottle and cap match?	Yes \Box	No 🗌	N/A 🗹	
Water - pH acceptable upon receipt?	Yes 🗌	No 🗌	N/A 🗹	<2 >12 unless noted
Container/Temp Blank temperature?		<6° C Accepta	ble	Delow.
COMMENTS:		If given sufficie	nt time to cool.	
,				
Client contacted Date contacted	ed:	Per	son contacted	
Contacted by: Regarding:				
Comments:				
· · · · · · · · · · · · · · · · · · ·	······································			
	······			
	***** <b>*</b>			
				······································
Corrective Action				
		•••••••••••••••••••••••••••••••••••••••	······	
	<u> </u>	- <u> </u>		

								_		CHAIN OF C	USTODY RECORD
South Environmental & Hydroge	West IENCE eologic Consultants	Laboratory: Address:4 A Contact:4 Phone:5	HEA 901 H bugu ndy 1	L aukin ferguls Fremer 1 c-3925	nm 87	) 7/05	An Re	ALYSIS QUESTE	a de la companya de		Lab use only Due Date: Temp. of coolers when received (C°): 1 2 3 4 5 Page 1 of 1
Project Manager J. Ma	Chine 12_	PO/SO #						***			
Josephumartine		Sampler's Signa	ture	antrag				19 9 19 9 19 9			
Proj. No.	Project Name	0		No/T	vpe of Con	tainers		V) Y			
OZIDOO3 Matrix Date Time	C G M I Identifying M	arks of Sample(s)	start epth		A/G 2	250 P/O	Ŕ		'	lab Sa	ample ID (i ab Lise Only)
S 12:4/11 1005	P b	(2)	0.5 0	25		1	1		+ + + +	1108	302-1
	1 TS-20	(RZ)	1	1			1				a Q
S U.DS	TS-3	(RZ)					/				3
S (620	TS-4	(R2)					1				4
5 1545	TS-11	(RZ)					V				5
s 1550	TS-19	(R2)	V	1			1				Le
S 1558	vz-1		2'2	2.5	Ì		1	1			7
5 1633	V VZ-9	2	1.5	2'		1	$\checkmark$	1			8
		e gen		<u></u>	╞╼╼┿╸						·····
furn around time	mal D 25% Rush	D 50% Ruch	100% B	ueb							
Relingpished by (Signature)	Date: 825/	Time: Receive	ed by: (	Signature)		Date	.	Time:	NOTES:		
Relinquished by (Signature)	Date:	Time: Receiv	ed by	Signature)		Date 8/27		Time: り;。こ Time:	New Mexico fer Josep	o A Arabyce +	the hold
Belinguísbed by (Signatura)	Date:	Time: Receiv	ed hv: (	Signature		Date		Time:	samples for	8015 GA 8021,	c/
Matrix WW - Wastewat Container VCA - 40 ml via	er W - Water J A/G - Amber /	S - Soil SD - Soil Or Glass 1 Liter	id L ·	- Liquid A	- Air Bag wide mout		- Char O - Pia	rocal tube	SL-sludge O-Oil	<u>.</u>	••••••••••••••••••••••••••••••••••••••

SOUTHWEST GEOSCIENCE • 2351 W. Northwest Hwy., Suite 3321 • Dallas, Texas 75220 • Office: 214-350-5469 • Fax 214-350-2914



#### COVER LETTER

Monday, November 14, 2011

Joseph Martinez Southwest Geoscience 8829 Tradeway San Antonio, TX 78217

TEL: (210) 804-9922 FAX (210) 804-9944

RE: S. Carlsbad CS

Dear Joseph Martinez:

Order No.: 1111342

Hall Environmental Analysis Laboratory, Inc. received 3 sample(s) on 11/5/2011 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please do not hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Laboratory Manager

NM Lab # NM9425 NM0901 AZ license # AZ0682

> 4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

Date: 14-Nov-11 Analytical Report

### Hall Environmental Analysis Laboratory, Inc.

			······				
CLIENT:	Southwest Geoscience			Clier	nt Sample ID:	TS-1 (R3)	)
Lab Order:	1111342			Co	llection Date:	11/3/2011	3:00:00 PM
Project:	S. Carlsbad CS			D	ate Received:	11/5/2011	
Lab ID:	1111342-01				Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE O	RGANICS					Analyst: JB
Diesel Range C	Organics (DRO)	440	100		mg/Kg	10	11/8/2011 8:14:11 PM
Surr: DNOP		0	73.4-123	S	%REC	10	11/8/2011 8:14:11 PM
EPA METHOD	8015B: GASOLINE RANG	E					Analyst: RAA
Gasoline Range	e Organics (GRO)	ND	9.8		mg/Kg	2	11/9/2011 4:40:28 PM
Surr: BFB		99.6	75. <b>2-136</b>		%REC	2	11/9/2011 4:40:28 PM
EPA METHOD	300.0: ANIONS						Analyst: BRM
Chloride		120	30		mg/Kg	20	11/10/2011 3:02:28 AM

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits

NC Non-Chlorinated

PQL Practical Quantitation Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

Date: 14-Nov-11 Analytical Report

#### Hall Environmental Analysis Laboratory, Inc.

CLIENT:	Southwest Geoscience			Clier	t Sample ID:	TS-3 (R3)				
Lab Order:	1111342		Collection Date: 11/3/2011 3:10:00 PM							
Project:	S. Carlsbad CS			D	ate Received:	11/5/2011				
Lab ID:	1111342-02				Matrix:	SOIL				
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed			
EPA METHOD	8015B: DIESEL RANGE C	RGANICS				······	Analyst: JB			
Diesel Range O	rganics (DRO)	1200	100		mg/Kg	10	11/9/2011 9:19:41 AM			
Surr: DNOP		0	73.4-123	S	%REC	10	11/9/2011 9:19:41 AM			
EPA METHOD	8015B: GASÓLINE RANG	E					Analyst: RAA			
Gasoline Range	organics (GRO)	ND	24		mg/Kg	5	11/9/2011 5:09:17 PM			
Surr: BFB		100	75.2-136		%REC	5	11/9/2011 5:09:17 PM			
EPA METHOD	300.0: ANIONS						Analyst: BRM			
Chloride		120	30		mg/Kg	20	11/10/2011 3:37:17 AM			

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

### Hall Environmental Analysis Laboratory, Inc.

CLIENT:	Southwest Geose	cience			Clien	t Sample ID:	VZ-2 (R)				
Lab Order:	1111342				Co	llection Date:	11/3/2011	11/3/2011 3:25:00 PM			
Project:	S. Carlsbad CS		<b>Date Received:</b> 11/5/2011								
Lab ID:	1111342-03		Matrix: SOIL								
Analyses		Res	ult	PQL	Qual	Units	DF	Date Analyzed			
EPA METHOD	8015B: DIESEL RA	NGE ORGAI	VICS					Analyst: JB			
Diesel Range C		34	10		m <b>g/K</b> g	1	11/8/2011 5:21:50 PM				
Surr: DNOP			114	73.4-123		%REC	1	11/8/2011 5:21:50 PM			
EPA METHOD	8015B: GASOLINE	RANGE						Analyst: RAA			
Gasoline Range	e Organics (GRO)		ND	4.9		mg/Kg	1	11/9/2011 5:38:07 PM			
Surr: BFB		+ Ę	96.5	75.2-136		%REC	1	11/9/2011 5:38:07 PM			
EPA METHOD	300.0: ANIONS							Analyst: BRM			
Chloride			100	30		mg/Kg	20	11/14/2011 12:19:00 PM			

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

Page 3 of 3

# **QA/QC SUMMARY REPORT**

Client:	Southwest Ge	oscience										
Project:	S. Carlsbad C	S								Work	Order:	1111342
Analyte		Result	Units	PQL	SPK Va	SPK ref	%Rec L	owLimit Hij	ghLimit	%RPD	RPDLimit	Qual
Method: EPA Met	hod 8015B: Die	esel Range	Organics				Batab ID:	20,955	Anohoi	a Data:	11/9/2044	9:04:47 484
Sample ID: MB-292	00		WBLK				Batch ID.	29200	Analysi		11/0/2011	0:04:17 AN
Diesel Range Organic	cs (DRO)	ND	mg/Kg	10			Datab ID.		A h !	- D-t	44/040044	0.00.54.114
Sample ID: LCS-29	255		LCS				Batch ID:	29255	Anaiysi	s Date:	11/6/2011	8:38:54 AM
Diesel Range Organic	cs (DRO)	52.07	mg/Kg	10	50	0	104	66.7	119			
Method: EPA Met	hod 8015B: Ga	soline Ran	ge									
Sample ID: MB-292	54		MBLK				Batch ID:	29254	Analysi	s Date:	<b>11/8/201</b> 1	1:06:47 PM
Gasoline Range Orga	nics (GRO)	ND	mg/Kg	5.0								
Sample (D: LCS-29)	254		LCS				Batch (D:	29254	Analysi	s Date:	11/8/2011 1	12:08:59 PM
Gasoline Range Orga	inics (GRO)	29.76	mg/Kg	5.0	<b>2</b> 5	0	119	86.4	132			

#### Qualifiers:

E Estimated value

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

H Holding times for preparation or analysis exceeded

NC Non-Chlorinated

R RPD outside accepted recovery limits

Page 1

# Hall Environmental Analysis Laboratory, Inc.

	Sample	Rece	eipt Ch	ecklist			
Client Name SOUTHWEST GEOSCIENCE	·			Date Receive	d:		11/5/2011
Work Order Number 1111342				Received by	: AMF		
Checklist completed by	Hang D	)/	Dete	Sample ID I	abels checke	d by:	
Matrix:	Carrier name:	<u>FedE</u>	X				
Shipping container/cooler in good condition?		Yes			Not Preser	ıt 🗌	
Custody seals intact on shipping container/coole	er?	Yes	$\checkmark$	No 🗌	Not Preser	ıt 🔲	Not Shipped
Custody seals intact on sample bottles?		Yes		No 🗔	N/A	V	
Chain of custody present?		Yes		No 🗌			
Chain of custody signed when relinquished and	received?	Yes		No 🗌			
Chain of custody agrees with sample labels?		Yes		No 🗖			
Samples in proper container/bottle?		Yes	V	No 🗌			
Sample containers intact?		Yes		No 🗌			
Sufficient sample volume for indicated test?		Yes.					
All samples received within holding time?		Yes		No 🗀			Number of preserved
Water - VOA vials have zero headspace?	No VOA vials subn	nitted		Yes 🗌	No 🗌	כ	pottles checked for pH:
Water - Preservation labels on bottle and cap m	atch?	Yes		Nó 🗔	N/A 5	2	
Water - pH acceptable upon receipt?		Yes		No 🗌	N/A 5	]	<2 >12 unless noted
Container/Temp Blank temperature?		3.	0°	<6° C Acceptab	le		Deiow.
COMMENTS:				If given sufficien	t time to cool	•	
							· ·
				Dam		ı	
	Date contacted:			Per	Son contacted		<u> </u>
Contacted by:	Regarding:						
Comments:							
Corrective Action							

		CHAIN OF COSTODY RECORD
Southwest SGEOSCIENCE Environmental & Hydrogeologic Consultants Office Location <u>See Asternio</u> Project Manager <u>S. Markinez</u> Sampler's Name Are one Bertley	Laboratory: <u>HEAL</u> Address: <u>4901 Hawkins, Ste D</u> <u>Albuquerque</u> , <u>NM 87109</u> Contact: <u>Andy Freema</u> Phone: <u>505 - 345 - 3975</u> PO/SO #: Sampler's Signature	ANALYSIS REQUESTED
Proj. No. Project Name	No/Type of Containers	
0210003 S. Carlsbad (	CS	
Matrix Date Time C G G r Identifying M	arks of Sample(s) 호흡 말 … 이 ~ A/G 250 P/O	Lab Sample ID (Lab Use Only)
5 1/3/11 1500 TE-11	(R3) 0' 16' 5. fm	1 1113417 -1
5 1/2/14 1510 / 45-31	(R3) 0' 12'05'	
	$\left( \begin{array}{c} 0 \\ 0 \end{array} \right) $ $\left( \begin{array}{c} 0 \end{array} \right) $	
5 MIJ/11 1525 VZ-00		
	AB	
	Entry	
Entry		
Nota		
Turn around time Normal 25% Rush	🗅 50% Rush 🔹 100% Rush	
Relinquished by (Signature) Date:	Time: Received by: (Signature) Date	Time: NOTES: $11 1316$ New Mexico $3^{\circ}$
Reinquished by (Signature) Date:	Time: Received by: (Signature) Date	
Relinquished by (Signature) Date:	Time: Regeived by: (Signature) Date	
<b>U</b> .	and us	11 11:00
Relinquished by (Signature) Date:	Time: Received by: (Signature) Date	Time:
Matrix WW - Wastewater W - Water Container VOA - 40 ml vial A/G - Amber / /	S - Soil SD - Solid L - Liquid A - Air Bag C - Or Glass 1 Liter 250 ml - Glass wide mouth P/0	- Charcoal tube SL - sludge O - Oil O - Plastic or other

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SOUTHWEST GEOSCIENCE • 2351 W. Northwest Hwy., Suite 3321 • Dallas, Texas 75220 • Office: 214-350-5469 • Fax 214-350-2914



#### COVER LETTER

Tuesday, December 13, 2011

Joseph Martinez Southwest Geoscience 8829 Tradeway San Antonio, TX 78217 TEL: (210) 804-9922 FAX (210) 804-9944

RE: S Carlsbad CS

Order No.: 1112379

Dear Joseph Martinez:

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 12/8/2011 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please do not hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Laboratory Manager

NM Lab # NM9425 NM0901

AZ license # AZ0682

## Hall Environmental Analysis Laboratory, Inc.

Date: 13-Dec-11

CLIENT:Southwest GeoscienceProject:S Carlsbad CSLab Order:1112379

#### **CASE NARRATIVE**

Analytical Comments for METHOD 8015DRO\_S, SAMPLE 1112379-01A: DNOP not recovered due to dilution

#### Date: 13-Dec-11 Analytical Report

#### Hall Environmental Analysis Laboratory, Inc.

CLIENT:	Southwest Geoscience			Clie	TS-3 (R4)				
Lab Order:	1112379			Co	12/6/2011 12:45:00 PM				
Project:	S Carlsbad CS			D	12/8/2011	12/8/2011			
Lab ID:	1112379-01				Matrix:	SOIL			
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed		
EPA METHOD	8015B: DIESEL RANGE O	RGANICS					Analyst: JB		
Diesel Range C	Drganics (DRO)	270	98		mg/Kg	10	12/11/2011 3:40:40 PM		
Surr: DNOP		0	77.4-131	S	%REC	10	12/11/2011 3:40:40 PM		
EPA METHOD	8015B: GASOLINE RANG	E					Analyst: RAA		
Gasoline Rang	e Organics (GRO)	ND	4.8		mg/Kg	1	12/12/2011 2:22:22 PM		
Surr: BFB		111	69.7-121		%REC	1	12/12/2011 2:22:22 PM		

Qualifiers:

- Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

# **QA/QC SUMMARY REPORT**

Client:Southwest GeoscienceProject:S Carlsbad CS

Work Order: 1112379

Analyte	Result	Units	PQL	SPK Va S	SPK ref	%Rec L	owLimit Hig	hLimit %RP[	O RPDLimi	t Quat
Method: EPA Method 8015B: [ Sample ID: MB-29685	Diesel Range	e Organics MBLK				Batch ID:	29685	Analysis Date:	12/10/2011	10:29:02 PM
Diesel Range Organics (DRO) Sample ID: LCS-29685	ND	mg/Kg LCS	10			Batch ID:	29685	Analysis Date:	12/10/2011	11:02:48 PM
Diesel Range Organics (DRO)	47.66	mg/Kg	10	50	0	95.3	62.7	139		
Method: EPA Method 8015B: ( Sample ID: 1112379-01AMSD	Basoline Rai	nge MSD				Batch ID:	29680	Analysis Date:	12/12/2011	11:58:40 PM
Gasoline Range Organics (GRO) Sample ID: MB-29680	28.41	mg/Kg <i>MBLK</i>	4.8	24.02	0	118 Batch ID:	72.4 <b>29680</b>	149 0.495 Analysis Date:	i 19.2 12/12/2011	11:49:58 AM
Gasoline Range Organics (GRO) Sample ID: LCS-29680	ND	mg/Kg LCS	5.0			Batch ID:	29680	Analysis Date:	12/12/2011	11:19:43 AM
Gasoline Range Organics (GRO) Sample ID: 1112379-01AMS	29.03	mg/Kg MS	5.0	25	0	116 Batch ID:	86.4 <b>29680</b>	132 Analysis Date:	12/12/2011	11:28:26 PM
Gasoline Range Organics (GRO)	28.27	m <b>g/Kg</b>	4.8	23.83	0	1 <b>19</b>	72.4	149		

Qualifiers:

E Estimated value

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

H Holding times for preparation or analysis exceeded

NC Non-Chlorinated

R RPD outside accepted recovery limits

## Hall Environmental Analysis Laboratory, Inc.

	Sample	Rec	eipt C	hecklist			
Client Name SOUTHWEST GEOSCIENCE				Date Receive	d:		12/8/2011
Work Order Number 1112379	111			Received by	: LNM		A-
Checklist completed by:	Haring	7	/ <u>//</u> Date	/ Sample ID la 8/1/	ibels checked	by: _	privilais
Matrix:	Carrier name:	Fedi	<u>-X</u>				
Shipping container/cooler in good condition?		Yes	V	No 🗖	Not Present		
Custody seals intact on shipping container/cool	er?	Yes	⊻	No 🗆	Not Present		Not Shipped
Custody seals intact on sample bottles?		Yes		No 🗌	N/A		
Chain of custody present?		Yes		No 🗌			
Chain of custody signed when relinquished and	received?	Yes		No 🗌			
Chain of custody agrees with sample labels?		Yes		No 🗌			
Samples in proper container/bottle?		Yes		No 🗌			
Sample containers intact?		Yes	$\checkmark$	No 🗌			
Sufficient sample volume for indicated test?		Yes		No 🗌			
All samples received within holding time?		Yes		No 🗌			Number of preserved
Water - VOA vials have zero headspace?	No VOA vials subm	nitted		Yes 🗌	No 🗌		pH:
Water - Preservation labels on bottle and cap m	natch?	Yes		No 🗌	N/A 🗹		
Water - pH acceptable upon receipt?		Yes		No 🗌	N/A 🗹		<2 >12 unless noted
Container/Temp Blank temperature?		3.	8°	<6° C Acceptabl	le		
COMMENTS:				If given sufficient	time to cool.		
				=====	====		=======
Client contacted	Date contacted:			Pers	on contacted		
Contacted by:	Regarding:						
Comments:							
Corrective Action	<u>.</u>						
				·····			

									CHA	AIN OF CUSTODY RECORD
South GEOSC Environmental & Hydroge Office Location <u>San</u>	+. D 09	ANALYSIS REQUESTED				Lab use only Due Date: Temp. of coolers when received (C°): 3, 5 1 2 3 4 5 Page 1 of 1				
Project Manager <u>5.</u>	Martinez	PO/SO #:				3	/ / /			
Sampler's Name		Sampler's Sigr	nature			1 3/		'	' / /	
Aaron Bent	ter	daron	Beatt	W .		& /				/
Proj. No.	Project Name		1	No/Type of	Containers		-			
ORLOCOS Matrix Date Time	<u>C G</u> m a Idem	sback C.S tifying Marks of Sample(s)	epth epth epth	VOA A/G	250 P/C			/ / /		i ab Samula (D (i ab i leo Onivi
	p b		<u>00 00</u>				·	-{-{		
5 1461n 1245	1 15	-3(K4)	0.5' 1'		$+ \downarrow$					1112379-1
					$\square$					
			18	$\square$						
		Foto								
	5	2 cthere								
	Nen									
								_		
										,
Turn around time Non Belinquished by (Signature)	nal 25% R	ush 0 50% Rush	100% Rush		Dat	ent Time	NOTES:			
livron Bertto	17 81	111 830 1000	Jour PM	inton L	$\supset  z $	3/11 1100	Nei M	exico		
Relinquished by (Šígnature)	Date:	Time: Recei	ived by: (Signa	yure)	Dat	e: Time:				
Relinquished by (Signature)	Date:	Time: Recei	ived by: (Signa	iture)	Dat	e: Time:				
Relinquished by (Signature)	Date:	Time: Recei	ived by: (Signa	iture)	Dat	e: Time:	•			
Matrix WW · Wastewate Container VOA - 40 ml vial	er W-W A/G-	ater S - Soil SD - So Amber / Or Glass 1 Liter	olid L - Liqui 250 ml	d. A - Air E Glass wide m	Bag C	- Charcoal tube (O - Plastic or other	SL - sludge	O - Oil		······································

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### HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: <u>www.hallenvironmental.com</u>

April 03, 2012

Joseph Martinez Southwest Geoscience 8829 Tradeway Street San Antonio, TX 78217 TEL: (210) 804-9922 FAX (210) 804-9944

RE: S Carlsbad CS

OrderNo.: 1203889

Dear Joseph Martinez:

Hall Environmental Analysis Laboratory received 2 sample(s) on 3/23/2012 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to <u>www.hallenvironmental.com</u> or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report Lab Order 1203889

Date Reported: 4/3/2012

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience			Clien	t Sample	ID: VZ-1		
Project: S Carlsbad CS			Col	lection Da	ate: 3/22/201	2 9:50	:00 AM
Lab ID: 1203889-001	Matrix:	SOIL	Re	ceived Da	ate: 3/23/201	2 9:25	:00 AM
Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE	ORGANICS						Analyst: JMP
Diesel Range Organics (DRO)	ND	5.40000	13		mg/Kg-d	1	3/25/2012 7:33:29 PM
Surr: DNOP	92.3	0.00000	77.4-131		%REC	1	3/25/2012 7:33:29 PM
EPA METHOD 8015B: GASOLINE RANG	GE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	1.40000	6.1		mg/Kg-d	1	3/29/2012 3:50:54 AM
Surr: BFB	90.0	0.00000	69.7-121		%REC	1	3/29/2012 3:50:54 AM
EPA METHOD 8021B: VOLATILES							Analyst: <b>NSB</b>
Benzene	ND	0.00470	0.061		mg/Kg-d	1	3/29/2012 3:50:54 AM
Toluene	ND	0.00810	0.061		mg/Kg-d	1	3/29/2012 3:50:54 AM
Ethylbenzene	ND	0.00390	0.061		mg/Kg-d	1	3/29/2012 3:50:54 AM
Xylenes, Total	ND	0.01600	0.12		mg/Kg-d	1	3/29/2012 3:50:54 AM
Surr: 4-Bromofluorobenzene	86.9	0.00000	80-120		%REC	1	3/29/2012 3:50:54 AM
PERCENT MOISTURE							Analyst: NSB
Percent Moisture	20	1.00000	1.0		wt%	1	3/29/2012
EPA METHOD 300.0: ANIONS							Analyst: BRM
Chloride	460	6.20000	37		mg/Kg-d	20	3/26/2012 3:08:25 PM

Qualifiers: \*/X Valu

\*/X Value exceeds Maximum Contaminant Level.

- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Detection Limit

Analytical Report Lab Order 1203889 Date Reported: 4/3/2012

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience		Client Sample ID: VZ-2										
Project: S Carlsbad CS			Col	lection Da	ate: 3/22/201	2 10:1	0:00 AM					
Lab ID: 1203889-002	Matrix:	SOIL	Re	:00 AM								
Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed					
EPA METHOD 8015B: DIESEL RANGE O	RGANICS			_			Analyst: JMP					
Diesel Range Organics (DRO)	ND	5.40000	13		mg/Kg-d	1	3/25/2012 7:55:16 PM					
Surr: DNOP	91.4	0.00000	77.4-131		%REC	1	3/25/2012 7:55:16 PM					
EPA METHOD 8015B: GASOLINE RANG	E						Analyst: NSB					
Gasoline Range Organics (GRO)	ND	1.30000	6.0		mg/Kg-d	1	3/29/2012 4:48:21 AM					
Surr: BFB	91.5	0.00000	69.7-121		%REC	1	3/29/2012 4:48:21 AM					
EPA METHOD 8021B: VOLATILES							Analyst: NSB					
Benzene	ND	0.00460	0.060		mg/Kg-d	1	3/29/2012 4:48:21 AM					
Toluene	ND	0.00790	0.060		mg/Kg-d	1	3/29/2012 4:48:21 AM					
Ethylbenzene	ND	0.00380	0.060		mg/Kg-d	1	3/29/2012 4:48:21 AM					
Xylenes, Total	ND	0.01600	0.12		mg/Kg-d	1	3/29/2012 4:48:21 AM					
Surr: 4-Bromofluorobenzene	89.2	0.00000	80-120		%REC	1	3/29/2012 4:48:21 AM					
PERCENT MOISTURE							Analyst: NSB					
Percent Moisture	21	1.00000	1.0		wt%	1	3/29/2012					
EPA METHOD 300.0: ANIONS							Analyst: BRM					
Chloride	1,300	6.30000	38		mg/Kg-d	20	3/26/2012 3:33:14 PM					

Qualifiers: \*/X

Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

Page 2 of 6

WO#: 1203889

03-Apr-12

Client:	Southwes	st Geoscier	ice								
Project:	S Carlsba	ad CS									
Sample ID	 MB-1232	SampT	ype: ME		Tes	tCode: E	PA Method	300.0: Anior	 1S		
Client ID:	PBS	Batch	n ID: <b>12</b> :	32	F	RunNo: 1	705				
Prep Date:	3/26/2012	Analysis D	)ate: 3/	26/2012	SeqNo: 48046			Units: mg/I	٨g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND	1.5				_				
Sample ID	LCS-1232	TestCode: EPA Method 300.0: Anions									
Client ID:	LCSS	Batch	n ID: <b>12</b>	32	RunNo: 1705						
Prep Date:	3/26/2012	Analysis D	)ate: 3/	26/2012	5	SeqNo: 4	8047	Units: <b>mg/l</b>	٢g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit.	HighLimit	%RPD	RPDLimit	Qual
Chloride		14	1.5	15.00	0	94.1	90	110			
Sample ID	1203906-002BMS	SampT	ype: MS	; ;	TestCode: EPA Method 300.0: Anions						
Client ID:	BatchQC	F	RunNo: 1								
Prep Date:	3/26/2012	6/2012 Analysis Date: 3/26/2012				SeqNo: 4	8057	Units: <b>mg/k</b>	٢g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		910	30	15.00	699.1	1,390	74.6	118	·		S
Sample ID	1203906-002BMSI	D SampT	ype MS	5D	Tes	tCode: E	PA Method	300.0: Anior	ns		<u> </u>
Client ID:	BatchQC	Batch	1 ID: 12	32	RunNo: 1705						
Prep Date:	3/26/2012	Analysis D	ate: 3/2	26/2012	S	SegNo: 4	8058	Units: mg/ł	٢g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		930	30	15.00	699.1	1,560	74.6	118	2.83	20	S
Sample ID	1203754-001AMS	Samp⊺	ype: MS	;	Tes	tCode: E	PA Method	300.0: Anior	15		
Client ID:	BatchQC	Batch	1 ID: 12:	32	Ā	RunNo: 1	705				
Prep Date:	3/26/2012	Analysis D	ate: 3/	26/2012	S	SeqNo: 4	8085	Units: mg/k	٢g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		16	15	15.00	4.302	80.1	74.6	118			
Sample ID	1203754-001AMS	D SampT	ype: MS	D	Tes	tCode: E	PA Method	300.0: Anior	IS		
Client ID:	BatchQC Batch ID: 1232				RunNo: 1705						
Prep Date:	3/26/2012	Analysis D	ate: 3/2	26/2012	S	SeqNo: 4	8091	Units: <b>mg/ł</b>	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		16	15	15.00	4.302	80.3	74.6	118	0.253	20	

Qualifiers:

\*/X Value exceeds Maximum Contaminant Level.

E Value above quantitation range

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Detection Limit

WO#: 1203889

03-Apr-12

Client:	Southwes	st Geoscience									
Project:	S Carlsba	ud CS									
Sample ID	MB-1227	SampType	e: Me	 BLK	Tes	tCode: E	PA Method	8015B: Dies	el Range (	Organics	
Client ID:	PBS	Batch IC	: 12	27	F	RunNo: 1	666				
Prep Date:	3/24/2012	Analysis Date	: 3/	25/2012	5	SeqNo: 4	7119	Units: <b>mg/ł</b>	۲g		
Analyte		Result F	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range	Organics (DRO)	ND	10								
Surr: DNOP		9.2		10.00		91.9	77.4	131			
Sample ID	LCS-1227	SampType	e: LC	:s	Tes	tCode: E	PA Method	8015B: Dies	el Range (	Organics	
Client ID:	LCSS	Batch ID	: 12	27	F	RunNo: 1	666				
Prep Date:	3/24/2012	Analysis Date	: <b>3/</b>	25/2012	5	SeqNo: 4	7120	Units: <b>mg/k</b>	٢g		
Analyte		Result F	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range	Organics (DRO)	45	10	50.00	0	89.2	62.7	139			
Surr: DNOP	•	4.3		5.000		85.7	77.4	131			
Sample ID	1203865-001AMS	Samp⊺ype	e: MS	 \$	Tes	tCode: El	PA Method	8015B: Dies	el Range (	Organics	
Client ID:	BatchQC	Batch ID	: 12	27	F	RunNo: 1	666				
Prep Date:	3/24/2012	Analysis Date	: 3/	25/2012	S	SeqNo: 4	7122	Units: mg/k	٢g		
Analyte		Result F	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range	Organics (DRO)	83	9.9	49.26	36.48	94.5	57.2	146			
Surr: DNOP		4.9		4.926		99.6	77.4	131			
Sample ID	1203865-001AMSI	D SampType	e: MS	SD	Tes	tCode: El	PA Method	8015B: Dies	el Range (	Drganics	
Client ID:	BatchQC	Batch ID	: 12	27	F	RunNo: 1	666				
Prep Date:	3/24/2012	Analysis Date	: 3/	25/2012	S	SeqNo: 4	7123	Units: mg/k	٢g		
Analyte		Result F	QL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range	Organics (DRO)	70	9.9	49.50	36.48	68.6	57.2	146	16.4	26.7	
Surr: DNOP	1	4.9		4.950		99.1	77.4	131	0	0	

#### Qualifiers:

\*/X Value exceeds Maximum Contaminant Level.

E Value above quantitation range

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Detection Limit

WO#: 1203889

03-Apr-12

Client: Project:	Southwes S Carlsba	st Geosciend ad CS	ce	<u>    .    .                           </u>							
Sample ID	MB-1222	SampTy	pe: MI	BLK	Tes	tCode: El	PA Method	8015B: Gas	oline Rang	e	
Client ID:	PBS	Batch	ID: 12	22	F	RunNo: 1	770				
Prep Date:	3/23/2012	Analysis Da	ate: 3/	/28/2012	S	SeqNo: 4	9724	Units: <b>mg/</b>	Kg		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Ran Surr: BFB	ge Organics (GRO)	ND 920	5.0	1,000		92.1	69.7	121			
Sample ID	LCS-1222	SampTy	pe: LC	s	Tes	tCode: El	PA Method	8015B: Gas	oline Rang	e	
Client ID:	LCSS	Batch	ID: 12	22	F	RunNo: 1	770				
Prep Date:	3/23/2012	Analysis Da	ite: 3/	/28/2012	5	SeqNo: 4	9725	Units: <b>mg</b> /	Kg		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	ge Organics (GRO)	28	5.0	25.00	0	112	98.5	133	_		
Surr: BFB		1,100		1,000		112	69.7	121			
Sample ID	1203871-001AMS	SampTy	pe: MS	S	Tes	tCode: El	PA Method	8015B: Gas	oline Rang	e	
Client ID:	BatchQC	Batch	ID: 12	22	F	RunNo: 1	770				
Prep Date:	3/23/2012	Analysis Da	ite: 3/	28/2012	S	SeqNo: 4	9744	Units: <b>mg/</b> I	Kg		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	ge Organics (GRO)	25	4.9	24.41	0	101	85.4	147			
Surr: BFB		940		976.6		96.1	69.7	121			
Sample ID	1203871-001AMS	) SampTy	pe: MS	SD	Tes	tCode: El	PA Method	8015B: Gas	oline Rang	e	
Client ID:	BatchQC	Batch	ID: 12	22	F	RunNo: 1	770				
Prep Date:	3/23/2012	Analysis Da	ite: 3/	28/2012	S	SeqNo: 4	9745	Units: <b>mg/l</b>	Kg		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Ranç	ge Organics (GRO)	24	4.7	23.72	0	101	85.4	147	3.60	19.2	
Surr: BFB		930		948.8		97.6	69.7	121	0	0	
Sample ID	1203961-001AMS	SampTy	pe: MS	3	Tes	tCode: El	PA Method	8015B: Gas	oline Rang	e	
Client ID:	BatchQC	Batch	ID: 12	66	F	RunNo: 1	805				
Prep Date:	3/27/2012	Analysis Da	ite: 3/	29/2012	5	BeqNo: 5	0508	Units: %RE	EC		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB		1,000	-	993.0		100	69.7	121			
Sample ID	1203961-001AMS	) SampTy	pe: MS	3D	Tes	tCode: El	PA Method	8015B: Gas	oline Rang	e	
Client ID:	BatchQC	Batch	ID: 12	66	F	RunNo: 1	805		-		
Prep Date:	3/27/2012	Analysis Da	te: 3/	29/2012	5	SeqNo: 5	0509	Units: %RE	EC		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB		960		947.9		101	69.7	121	0	0	

#### Qualifiers:

\*/X Value exceeds Maximum Contaminant Level.

E Value above quantitation range

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Detection Limit

•

Client: Southwest Geoscience

Project: S Carlsbad CS

Sample ID MB-1222	Samp	Туре: МЕ	BLK	Tes	tCode: E	PA Method	8021B: Vola	tiles		
Client ID: PBS	Bato	h ID: 12	22	F	RunNo: 1	771				
Prep Date: 3/23/2012	2 Analysis	Date: 3/	28/2012	8	SeqNo: 4	9749	Units: mg/ł	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	0.0068	0.050								J
Xylenes, Total	0.020	0.10								J
Surr: 4-Bromofluorobenzer	ne 0.91		1.000		91.4	80	120			
Sample ID LCS-1222	Samp	Type: LC	S	Tes	tCode: E	PA Method	8021B: Vola	tiles		
Client ID: LCSS	Bato	h ID: 12	22	F	RunNo: 1	771				
Prep Date: 3/23/2012	2 Analysis I	Date: 3/	28/2012	5	SeqNo: 4	9750	Units: <b>mg/ł</b>	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.050	1.000	0	93.4	83.3	107			
Toluene	0.94	0.050	1.000	0	94.0	74.3	115			
Ethylbenzene	0.93	0.050	1.000	0	93.5	80.9	122			
Xylenes, Total	2.8	0.10	· 3.000	0	93.6	85.2	123			
Surr: 4-Bromofluorobenzer	ne 0.94		1.000		94.0	80	120	•		
Sample ID 1203865-0	01AMS Samp	Type: MS	6	Tes	tCode: E	PA Method	8021B: Vola	tiles		
Sample ID 1203865-00 Client ID: BatchQC	01AMS Samp Batc	Type: <b>MS</b> th ID: <b>12</b>	3 22	Tes	tCode: El RunNo: 1	PA Method 771	8021B: Vola	tiles		
Sample ID 1203865-00 Client ID: BatchQC Prep Date: 3/23/2012	01AMS Samp Bato 2 Analysis I	Type: MS h ID: 12; Date: 3/	3 22 28/2012	Tes F S	tCode: <b>E</b> l RunNo: 1 SeqNo: 4	PA Method 771 9763	8021B: Vola Units: mg/ł	tiles (g		
Sample ID 1203865-00 Client ID: BatchQC Prep Date: 3/23/2012 Analyte	01AMS Samp Bate 2 Analysis I Result	Type: <b>MS</b> th ID: <b>12</b> Date: <b>3/</b> PQL	3 22 28/2012 SPK value	Tes F SPK Ref Val	tCode: El RunNo: 1 SeqNo: 4 %REC	PA Method 771 9763 LowLimit	8021B: Vola Units: <b>mg/k</b> HighLimit	tiles (g %RPD	RPDLimit	Qual
Sample ID 1203865-00 Client ID: BatchQC Prep Date: 3/23/2012 Analyte Benzene	01AMS Samp Bato 2 Analysis I Result 1.3	Type: <b>MS</b> th ID: <b>12</b> Date: <b>3</b> / PQL 0.092	5 22 28/2012 SPK value 0.9242	Tes F S SPK Ref Val 0.6709	tCode: El RunNo: 1 SeqNo: 4 %REC 71.7	PA Method 771 9763 LowLimit 67.2	8021B: Vola Units: mg/k HighLimit 113	tiles (g %RPD	RPDLimit	Qual
Sample ID 1203865-00 Client ID: BatchQC Prep Date: 3/23/2012 Analyte Benzene Toluene	01AMS Samp Bato 2 Analysis I Result 1.3 2.6	Type: MS th ID: 12: Date: 3/ PQL 0.092 0.092	5 22 28/2012 SPK value 0.9242 0.9242	Tes F SPK Ref Val 0.6709 1.664	tCode: El RunNo: 1 SeqNo: 4 %REC 71.7 98.6	PA Method 771 9763 LowLimit 67.2 62.1	8021B: Vola Units: mg/l HighLimit 113 116	tiles (g %RPD	RPDLimit	Qual
Sample ID 1203865-00 Client ID: BatchQC Prep Date: 3/23/2012 Analyte Benzene Toluene Ethylbenzene	01AMS Samp Bato 2 Analysis I Result 1.3 2.6 1.4	Type: MS th ID: 12: Date: 3/ PQL 0.092 0.092 0.092	5 22 28/2012 SPK value 0.9242 0.9242 0.9242	Tes F SPK Ref Val 0.6709 1.664 0.6888	tCode: E RunNo: 1 SeqNo: 4 %REC 71.7 98.6 81.6	PA Method 771 9763 LowLimit 67.2 62.1 67.9	8021B: Vola Units: mg/H HighLimit 113 116 127	tiles (g %RPD	RPDLimit	Qual
Sample ID 1203865-00 Client ID: BatchQC Prep Date: 3/23/2012 Analyte Benzene Toluene Ethylbenzene Xylenes, Total	01AMS Samp Bate 2 Analysis I Result 1.3 2.6 1.4 9.8	Type: MS th ID: 122 Date: 3/ PQL 0.092 0.092 0.092 0.18	5 22 28/2012 SPK value 0.9242 0.9242 0.9242 2.773	Tes F SPK Ref Val 0.6709 1.664 0.6888 7.386	tCode: E RunNo: 1 SeqNo: 4 %REC 71.7 98.6 81.6 88.3	PA Method 771 9763 LowLimit 67.2 62.1 67.9 60.6	8021B: Vola Units: mg/k HighLimit 113 116 127 134	tiles (g %RPD	RPDLimit	Qual
Sample ID 1203865-00 Client ID: BatchQC Prep Date: 3/23/2012 Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bromofluorobenzer	01AMS Samp Bato 2 Analysis I Result 1.3 2.6 1.4 9.8 ne 2.0	Type: MS ch ID: 12: Date: 3/ PQL 0.092 0.092 0.092 0.18	5 22 28/2012 SPK value 0.9242 0.9242 0.9242 2.773 1.848	Tes F SPK Ref Val 0.6709 1.664 0.6888 7.386	tCode: El RunNo: 1 SeqNo: 4 %REC 71.7 98.6 81.6 88.3 109	PA Method 771 9763 LowLimit 67.2 62.1 67.9 60.6 80	8021B: Vola Units: mg/l HighLimit 113 116 127 134 120	tiles (g %RPD	RPDLimit	Qual
Sample ID 1203865-00 Client ID: BatchQC Prep Date: 3/23/2012 Analyte Benzene Toluene Ethylbenzene Xylenes, Total Sur: 4-Bromofluorobenzer Sample ID 1203865-00	01AMS Samp Bato 2 Analysis I Result 1.3 2.6 1.4 9.8 ne 2.0 01AMSD Samp	Type: MS th ID: 12: Date: 3/ PQL 0.092 0.092 0.18 Type: MS	S 28/2012 SPK value 0.9242 0.9242 2.773 1.848	Tes F SPK Ref Val 0.6709 1.664 0.6888 7.386 Tes	tCode: El RunNo: 1 SeqNo: 4 %REC 71.7 98.6 81.6 88.3 109 tCode: El	PA Method 771 9763 LowLimit 67.2 62.1 67.9 60.6 80 PA Method	8021B: Vola Units: mg// HighLimit 113 116 127 134 120 8021B: Vola	tiles (g %RPD	RPDLimit	Qual
Sample ID       1203865-00         Client ID:       BatchQC         Prep Date:       3/23/2012         Analyte       Benzene         Toluene       Ethylbenzene         Xylenes, Total       Surr: 4-Bromofluorobenzer         Sample ID       1203865-00         Client ID:       BatchQC	01AMS Samp Bato 2 Analysis I Result 1.3 2.6 1.4 9.8 ne 2.0 01AMSD Samp Bato	Type: MS ch ID: 12: Date: 3/ PQL 0.092 0.092 0.092 0.18 Type: MS ch ID: 12:	S 22 28/2012 SPK value 0.9242 0.9242 0.9242 2.773 1.848 SD 22	Tes F SPK Ref Val 0.6709 1.664 0.6888 7.386 Tes F	tCode: El RunNo: 1 SeqNo: 4 %REC 71.7 98.6 81.6 88.3 109 tCode: El RunNo: 1	PA Method 771 9763 LowLimit 67.2 62.1 67.9 60.6 80 PA Method 771	8021B: Vola Units: mg/l HighLimit 113 116 127 134 120 8021B: Vola	tiles (g %RPD	RPDLimit	Qual
Sample ID 1203865-00 Client ID: BatchQC Prep Date: 3/23/2012 Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bromofluorobenzer Sample ID 1203865-00 Client ID: BatchQC Prep Date: 3/23/2012	01AMS Samp Bato 2 Analysis I Result 1.3 2.6 1.4 9.8 ne 2.0 01AMSD Samp Bato 2 Analysis I	Type: MS ch ID: 12: Date: 3/ PQL 0.092 0.092 0.092 0.18 Type: MS ch ID: 12: Date: 3/	S 22 28/2012 SPK value 0.9242 0.9242 2.773 1.848 SD 22 28/2012	Tes F SPK Ref Val 0.6709 1.664 0.6888 7.386 Tes F S	tCode: El RunNo: 1 SeqNo: 4 %REC 71.7 98.6 81.6 88.3 109 tCode: El RunNo: 1 SeqNo: 4	PA Method 771 9763 LowLimit 67.2 62.1 67.9 60.6 80 PA Method 771 9764	8021B: Vola Units: mg/k HighLimit 113 116 127 134 120 8021B: Vola Units: mg/k	tiles (g %RPD tiles	RPDLimit	Qual
Sample ID1203865-00Client ID:BatchQCPrep Date:3/23/2012AnalyteBenzeneTolueneEthylbenzeneXylenes, TotalSur: 4-BromofluorobenzerSample ID1203865-00Client ID:BatchQCPrep Date:3/23/2012Analyte	01AMS Samp Bato 2 Analysis I Result 1.3 2.6 1.4 9.8 1e 2.0 01AMSD Samp Bato 2 Analysis I Result	Type: MS ch ID: 12: Date: 3/ PQL 0.092 0.092 0.092 0.18 Type: MS ch ID: 12: Date: 3/ PQL	3 22 28/2012 SPK value 0.9242 0.9242 2.773 1.848 5D 22 28/2012 SPK value	Tes 5 SPK Ref Val 0.6709 1.664 0.6888 7.386 Tes F SPK Ref Val	tCode: El RunNo: 1 SeqNo: 4 %REC 71.7 98.6 81.6 88.3 109 tCode: El RunNo: 1 SeqNo: 4 %REC	PA Method 771 9763 LowLimit 67.2 62.1 67.9 60.6 80 PA Method 771 9764 LowLimit	8021B: Vola Units: mg/l HighLimit 113 116 127 134 120 8021B: Vola Units: mg/l HighLimit	tiles (g %RPD tiles (g %RPD	RPDLimit	Qual
Sample ID       1203865-00         Client ID:       BatchQC         Prep Date:       3/23/2012         Analyte       Benzene         Toluene       Ethylbenzene         Xylenes, Total       Sur: 4-Bromofluorobenzer         Sample ID       1203865-00         Client ID:       BatchQC         Prep Date:       3/23/2012         Analyte       Benzene	01AMS Samp Bato 2 Analysis I Result 1.3 2.6 1.4 9.8 1e 2.0 01AMSD Samp Bato 2 Analysis I Result 1.7	Type: MS bh ID: 12: Date: 3/ PQL 0.092 0.092 0.092 0.18 Type: MS th ID: 12: Date: 3/ PQL 0.092	22 28/2012 SPK value 0.9242 0.9242 0.9242 2.773 1.848 SD 22 28/2012 SPK value 0.9208	Tes SPK Ref Val 0.6709 1.664 0.6888 7.386 Tes SPK Ref Val 0.6709	tCode: El RunNo: 1 SeqNo: 4 %REC 71.7 98.6 81.6 88.3 109 tCode: El RunNo: 1 SeqNo: 4 %REC 111	PA Method 771 9763 LowLimit 67.2 62.1 67.9 60.6 80 PA Method 771 9764 LowLimit 67.2	8021B: Vola Units: mg/ł HighLimit 113 116 127 134 120 8021B: Vola Units: mg/ł HighLimit 113	tiles (g %RPD tiles (g %RPD 23.9	RPDLimit RPDLimit 14.3	Qual Qual R
Sample ID       1203865-00         Client ID:       BatchQC         Prep Date:       3/23/2012         Analyte       Benzene         Toluene       Ethylbenzene         Xylenes, Total       Surr: 4-Bromofluorobenzer         Sample ID       1203865-00         Client ID:       BatchQC         Prep Date:       3/23/2012         Analyte       Benzene         Toluene       Toluene	01AMS Samp Bato 2 Analysis I Result 1.3 2.6 1.4 9.8 1e 2.0 01AMSD Samp Bato 2 Analysis I Result 1.7 3.7	Type: MS ch ID: 12: Date: 3/ PQL 0.092 0.092 0.092 0.18 Type: MS ch ID: 12: Date: 3/ PQL 0.092 0.092	5 22 28/2012 SPK value 0.9242 0.9242 2.773 1.848 5D 22 28/2012 SPK value 0.9208 0.9208	Tes SPK Ref Val 0.6709 1.664 0.6888 7.386 Tes F SPK Ref Val 0.6709 1.664	tCode: El RunNo: 1 SeqNo: 4 %REC 71.7 98.6 81.6 88.3 109 tCode: El RunNo: 1 SeqNo: 4 %REC 111 222	PA Method 771 9763 LowLimit 67.2 62.1 67.9 60.6 80 PA Method 771 9764 LowLimit 67.2 62.1	8021B: Vola Units: mg/k HighLimit 113 116 127 134 120 8021B: Vola Units: mg/k HighLimit 113 116	tiles (g %RPD tiles (g %RPD 23.9 36.0	RPDLimit RPDLimit 14.3 15.9	Qual Qual R SR
Sample ID       1203865-04         Client ID:       BatchQC         Prep Date:       3/23/2012         Analyte       Benzene         Toluene       Ethylbenzene         Xylenes, Total       Surr: 4-Bromofluorobenzer         Sample ID       1203865-04         Client ID:       BatchQC         Prep Date:       3/23/2012         Analyte       Benzene         Toluene       Ethylbenzene         Sample ID       1203865-04         Client ID:       BatchQC         Prep Date:       3/23/2012         Analyte       Benzene         Toluene       Ethylbenzene         Yoluene       Ethylbenzene	01AMS Samp Bato 2 Analysis I Result 1.3 2.6 1.4 9.8 ne 2.0 01AMSD Samp Bato 2 Analysis I Result 1.7 3.7 1.9	Type: MS ch ID: 12: Date: 3/ PQL 0.092 0.092 0.092 0.18 Type: MS ch ID: 12: Date: 3/ PQL 0.092 0.092 0.092 0.092	5 22 28/2012 SPK value 0.9242 0.9242 2.773 1.848 5D 22 28/2012 SPK value 0.9208 0.9208 0.9208 0.9208	Tes 5 5PK Ref Val 0.6709 1.664 0.6888 7.386 Tes 5 5PK Ref Val 0.6709 1.664 0.6888	tCode: El RunNo: 1 SeqNo: 4 %REC 71.7 98.6 81.6 88.3 109 tCode: El RunNo: 1 SeqNo: 4 %REC 111 222 134	PA Method 771 9763 LowLimit 67.2 62.1 67.9 60.6 80 PA Method 771 9764 LowLimit 67.2 62.1 67.9	8021B: Vola Units: mg/k HighLimit 113 116 127 134 120 8021B: Vola Units: mg/k HighLimit 113 116 127	tiles (g %RPD tiles (g %RPD 23.9 36.0 28.5	RPDLimit RPDLimit 14.3 15.9 14.4	Qual Qual R SR SR SR
Sample ID       1203865-04         Client ID:       BatchQC         Prep Date:       3/23/2012         Analyte       3/23/2012         Analyte       Benzene         Toluene       Ethylbenzene         Xylenes, Total       Surr: 4-Bromofluorobenzer         Sample ID       1203865-04         Client ID:       BatchQC         Prep Date:       3/23/2012         Analyte       Benzene         Toluene       Ethylbenzene         Xylenes, Total       Surr: 4.000000000000000000000000000000000000	01AMS Samp Bato 2 Analysis I Result 1.3 2.6 1.4 9.8 ne 2.0 01AMSD Samp Bato 2.0 01AMSD Samp Bato 2.0 01AMSD Samp 1.7 3.7 1.9 14	Type: MS ch ID: 12: Date: 3/ PQL 0.092 0.092 0.092 0.18 Type: MS ch ID: 12: Date: 3/ PQL 0.092 0.092 0.092 0.092 0.18	5 22 28/2012 SPK value 0.9242 0.9242 2.773 1.848 5D 22 28/2012 SPK value 0.9208 0.9208 0.9208 0.9208 2.762	Tes SPK Ref Val 0.6709 1.664 0.6888 7.386 Tes F SPK Ref Val 0.6709 1.664 0.6888 7.386	tCode: El RunNo: 1 SeqNo: 4 %REC 71.7 98.6 81.6 88.3 109 tCode: El RunNo: 1 SeqNo: 4 %REC 111 222 134 234	PA Method 771 9763 LowLimit 67.2 62.1 67.9 60.6 80 PA Method 771 9764 LowLimit 67.2 62.1 67.9 60.6	8021B: Vola Units: mg// HighLimit 113 116 127 134 120 8021B: Vola Units: mg// HighLimit 113 116 127 134	tiles (g %RPD tiles (g %RPD 23.9 36.0 28.5 33.8	RPDLimit 14.3 15.9 14.4 12.6	Qual Qual R SR SR SR SR SR

#### Qualifiers:

\*/X Value exceeds Maximum Contaminant Level.

E Value above quantitation range

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Detection Limit

1203889

03-Apr-12

WO#:

#### HALL ENVIRONMENTAL ANALYSIS LABORATORY

#### Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquergue, NM 87105 TEL: 505-345-3975 FAX: 505-345-410; Website: www.hallenvironmental.com

# Sample Log-In Check List

_													
Clie	ent Name:	Southwest	Geoscience Sa	n Antonio	Work Or	der I	Num	ber: '	1203	889			
Red	ceived by/date	e:	03/23/12	2-									
Log	iged By:	Anne Thor	ne	3/23/2012 9:25:00 A	M			Am	. J.				
Cor	npleted By:	Anne Thor	ne	3/23/2012				Am	. A.				
Rev	viewed By:	AT	- 03/23	5/12					•				
<u>Cha</u>	ain of Cus	tody											
1.	Were seals	intact?			Yes		No		No	ot Preser	nt 🗹		
2.	is Chain of (	Custody com	olete?		Yes	$\checkmark$	No		No	ot Preser	nt 🗆		
3.	How was the	e sample deli	vered?		<u>Fed</u>	x							
Log	<u>In</u>												
4.	Coolers are	present? (see	e 19. for cooler s	pecific information)	Yes		No			N	<b>▲</b> □		
5.	Was an atte	mpt made to	cool the sample	s?	Yes	✓	No			N.	a 🗋		
6.	Were all san	nples receive	d at a temperatu	re of >0° C to 6.0°C	Yes		No			N	a 🗆		
7.	Sample(s) in	n proper conta	ainer(s)?		Yes		No						
8.	Sufficient sa	mple volume	for indicated tes	t(s)?	Yes	$\checkmark$	No						
9.	Are samples	(except VOA	and ONG) prop	erly preserved?	Yes	$\checkmark$	No						
10.	Was preserv	ative added (	o bottles?		Yes		No	✓		NA			
11.	VOA vials ha	ave zero head	Ispace?		Yes		No		No	VOA Vial	s 🗹		
12.	Were any sa	imple contain	ers received bro	ken?	Yes		No						
13.	Does paperv (Note discre	vork match be pancies on cl	ottle labels? nain of custody)		Yes	V	No			# of p botties for pH	reserved s checked I:		
14.	Are matrices	correctly ide	ntified on Chain	of Custody?	Yes	V	No				(<:	2 or >12	unless noted)
15.	ls it clear wh	at analyses w	vere requested?		Yes	✓	No				Adjusted?		
16.	Were all hold (If no, notify (	ling times ab customer for	ie to be met? authorization.)		Yes		No			c	Checked by	:	
Spe	cial Handi	ing (If app	licable)										
17.	Was client n	otified of all d	iscrepancies wit	h this order?	Yes		No			Ň	A 🗹		
	Регзол	Notified:		Date	<b></b>								
	By Who	om:	and a set of a	Via:	eMa	il [	] Pł	none	📋 F	ax 🗌	In Person		
	Regardi	ing:					-						
	Client Ir	nstructions:						,					

18. Additional remarks:

#### 19. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.2	Good	Not Present			



SOUTHWEST GEOSCIENCE • 2351 W. Northwest Hwy., Suite 3321 • Dallas, Texas 75220 • Office: 214-350-5469 • Fax 214-350-2914