

June 13, 2018

Mike Bratcher New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Division, District II 811 South First St. Artesia, NM 88210

Henryetta Price Carlsbad Field Office United States Department of the Interior Bureau of Land Management 620 E. Greene Street Carlsbad, New Mexico 88220

Re: Soil Investigation Summary and Proposed Remediation Workplan GJ West Coop Unit #108 & #011 NMOCD Reference No. 2RP-4351 & 2RP-4454 Unit Letter "E", Section 28, Township 17 South, Range 29 East Eddy County, New Mexico

Dear Mr. Bratcher and Ms. Price,

TRC Environmental Corporation (TRC), on behalf of COG Operating, LLC (COG) has prepared this *Soil Investigation Summary and Proposed Remediation Workplan* (*Workplan*) for the Release Sites known as GJ West Coop Unit #011 and GJ West Coop Unit #108. The purpose of this Workplan is to propose remediation activities designed to advance the Release Sites toward a New Mexico Oil Conservation Division (NMOCD) and United States Bureau of Land Management (BLM) approved Site Closure Status. The legal description of the Release Site is Unit Letter "E", Section 28, Township 17 South, Range 29 East, in Eddy County, New Mexico. Based on the proximity, cause and current status of each of the release sites, they are being handled under one (1) *Workplan* and will be remediated concurrently. Please reference Attachment 1, Figure 1 - Site Location Map and Attachment 2, Figure 2 - Site Map – Overview. A "Photographic Log" is provided as Attachment 10.

## GJ West Coop Unit #108

On August 7, 2017, COG discovered a release on the plugged and abandoned GJ West Coop Unit #108 well. The release was attributed to an unexpected problem associated with the historical plugging of the associated well. During initial response activities, the affected portion of the well casing was exhumed and the release was mitigated. The initial Release Notification and Corrective Action (Form C-141)

indicated approximately three thousand, seventy-five (3,075) barrels (bbls) of produced water were released with approximately three thousand, fifty-five (3,055) bbls of produced water being recovered. Upon completion of recovery efforts it was determined that seven thousand, seven hundred eleven (7,711) bbls were recovered, which will be reflected on the Final C-141. During initial response activities, released fluids were diverted into a makeshift containment in an effort to minimize the affected area and assist in fluid recovery. In an effort to exhume the casing, isolate the release and replug the well, an approximate twenty-eight (28) ft. excavation was advanced around the affected well. Upon completion of excavation and sloping activities, at least 7,847 cubic yards (cy) of affected soil was excavated from an area measuring approximately twenty-two thousand (22,000) sq. ft. Excavated soil was transported to an NMOCD-approved disposal facility. A copy of the initial Form C-141 for the GJ West Coop Unit #108 is provided as Attachment 11.

## GJ West Coop Unit #011

On October 15, 2017, a similar release occurred on an adjacent plugged and abandoned well, the GJ West Coop Unit #011. The release was attributed to an unexpected problem associated with the historical plugging of the associated well. During initial response activities, the release was mitigated and the affected well was replugged. The initial Release Notification and Corrective Action (Form C-141) indicated an unknown volume of produced water was released with approximately eight thousand, seven hundred forty (8,740) bbls of produced water being recovered. Upon completion of recovery efforts it was determined that eleven thousand, four hundred thirty (11,430) bbls were recovered, which will be reflected on the Final C-141. The release affected an area measuring approximately sixteen thousand (16,000) sq. ft. A majority of the release was limited to the former well pad location and the adjacent well pad to the south of the subject well. Portions of the release affected the caliche access road and an area within the pasture north of the subject well. A copy of the initial Form C-141 for the GJ West Coop Unit #011 is provided as Attachment 12.

## NMOCD SITE CLASSIFICATION

A groundwater database maintained by The New Mexico Office of the State Engineer (NMOSE) did not identify any registered water wells in Section 28, Township 17 South, Range 29 East. A reference map utilized by the NMOCD indicates groundwater should be encountered at approximately one hundred seventy-five (175) feet (ft.) below ground surface (bgs). Based on the NMOCD site classification system, zero (0) points will be assigned to the subject area ranking as a result of this criterion.

No water wells were observed within one-thousand (1,000) feet of the Release Site. Based on the NMOCD site classification system, zero (0) points will be assigned to the subject area ranking as a result of this criterion.

No surface water was observed within one-thousand (1,000) feet of the release. Based on the NMOCD site classification system, zero (0) points will be assigned to the subject area ranking as a result of this criterion.

Based on the NMOCD Site Classification criteria, the Recommended Remediation Action Levels (RRAL) are 10 mg/kg for benzene, 50 mg/kg for benzene, toluene, ethylbenzene and xylenes (BTEX), and one thousand (5,000) mg/kg for total petroleum hydrocarbons (TPH). As per the NMOCD, the Recommended Remediation Action Levels for chloride will be 600 mg/kg.

## FIELD ACTIVITIES

## GJ West Coop Unit #108

On August 17, 2017, during initial response activities and exhumation of the affected well casing, COG representatives collected four (4) soil samples (S1 3'-4', S1 5'-6', S1 13'-14' and S1 16'-17') southwest of the affected casing. The collected soil samples were submitted to Cardinal Laboratories for analysis of chloride concentrations using method 4500 Cl-B. Laboratory analytical results indicated chloride concentrations ranged from 28,000 mg/kg in soil sample S1 5'-6' to 992 mg/kg in soil sample S1 3'-4'. Impacted soil represented by soil samples S1 3'-4', S1 5'-6', S1 13'-14' and S1 16'-17' was excavated and transported to an NMOCD-approved disposal facility during initial response activities. Please reference Attachment 3, Figure 3a – Site & Sample Location Map – GJ West Coop Unit #108.

On March 22 and 23, 2018, TRC conducted an initial soil investigation at the release site. During the initial soil investigation, a series of test trenches (NE-1, SE-2, SE-1, S-2, S-1, SW-1, NW-1 and N-1) were advanced at the release site in an effort to characterize the affected area. The test trenches were advanced vertically and horizontally to the maximum extent practicable, or until chloride field test results suggested soil was no longer affected above the NMOCD RRAL for chloride.

Test trench NE-1 was advanced radially toward the northeast from the affected well. During the advancement of the test trench, six (6) soil samples (NE-1A @ 18', NE-1B @ 10', NE-1B @ 20', NE-1C @ 3', NE-1C @ 12' and NE-1C @ 20') were collected from three (3) sample points and submitted to Xenco Laboratories in Midland, Texas for analysis of chloride concentrations using Method E300. Laboratory analytical results indicated chloride concentrations ranged from 723 mg/kg in soil sample NE-1A @ 18' to 72.4 mg/kg in soil sample NE-1C @ 20'. Soil samples collected from sample points NE-1A and NE-1B were also analyzed for concentrations of BTEX using Method SW 846-8021B and TPH using Method SW 846-8015M. Analytical results indicated BTEX and TPH concentrations were less than the applicable laboratory reporting limit (RL) in each of the submitted soil samples. Based on laboratory analytical results, soil was not affected above the NMOCD RRAL for chloride horizontally toward the northeast beyond sample point NE-1B.

Test trench SE-2 was advanced radially toward the east-southeast from the affected well. During the advancement of the test trench, thirteen (13) soil samples (SE-2A @ 18', SE-2B @ 10', SE-2B @ 20'. SE-2C @ 3', SE-2C @ 6', SE-2C @ 12', SE-2C @ 20', SE-2D @ 3', SE-2D @ 9', SE-2D @ 12', SE-2D @ 20', SE-2E @ 3' and SE-2E @ 6') were collected from five (5) sample points and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from 20,600 mg/kg in soil sample SE-2D @ 3' to 48.7 mg/kg in soil sample SE-2B @ 20'. Soil samples collected from sample points SE-1A and SE-1B were also analyzed for concentrations of BTEX and TPH, which were determined to be less than the applicable laboratory RL in each of the submitted soil samples. Laboratory analytical results indicated soil was not affected above the NMOCD RRAL for chloride beyond eighteen (18) ft. bgs in the area characterized by sample point SE-2A, ten (10) ft. bgs in the area characterized by sample point SE-2B, six (6) ft. bgs in the area characterized by sample point SE-2D and six (6) ft. bgs in the area characterized by sample point SE-2D and six (6) ft. bgs in the area characterized by sample point SE-2B. Review of laboratory analytical results suggests impacted soil affected above the NMOCD RRAL for chloride beyond eighteen the NMOCD RRAL for chloride beyond eighteen (12) ft. bgs in the area characterized by sample point SE-2D. The area characterized by sample point SE-2D. The area characterized by sample point SE-2D. The area characterized by sample point SE-2E. Review of laboratory analytical results suggests impacted soil affected above the NMOCD RRAL for chloride in the areas characterized by sample point SE-2A and SE-2B was removed during initial response activities. Impacted soil

affected above the NMOCD RRAL remaining in-situ in the areas characterized by sample points SE-2C, SE-2D and SE-2E is limited to the top six (6) ft. to twelve (12) ft.

Test trench SE-1 was advanced radially toward the southeast from the affected well. During the advancement of the test trench, six (6) soil samples (SE-1A @ 18', SE-1B @ 10', SE-1B @ 20', SE-1C @ 3', SE-1C @ 12' and SE-1C @ 20') were collected from three (3) sample points and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from 2,940 mg/kg in soil sample SE-1B @ 10' to 65.7 mg/kg in soil sample SE-2C @ 20'. Soil samples collected from sample points SE-1A and SE-1B were also analyzed for concentrations of BTEX and TPH, which were determined to be less than the applicable laboratory RL in each of the submitted soil samples. Based on laboratory analytical results, soil was not affected above the NMOCD RRAL for chloride horizontally toward the southeast beyond sample point SE-1C.

Test trench S-2 was advanced on the southern edge of the current excavation. During the advancement of the test trench, three (3) soil samples (S-2 @ 3', S-2 @ 12' and S-2 @ 20') were collected and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from 169 mg/kg in soil sample S-2 @ 3' to less than the laboratory RL in soil sample S-2 @ 20'. Based on laboratory analytical results, soil was not affected above the NMOCD RRAL for chloride horizontally toward the south beyond test trench S-2.

Test trench S-1 was advanced radially toward the south-southwest from the affected well. During the advancement of the test trench, six (6) soil samples (S-1A @ 18', S-1B @ 10', S-1B @ 20', S-1C @ 3', S-1C @ 12' and SE-1C @ 20') were collected from three (3) sample points and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from 18,500 mg/kg in soil sample S-1B @ 10' to less than the laboratory RL in soil sample S-1C @ 20'. Soil samples collected from sample points S-1A and S-1B were also analyzed for concentrations of BTEX and TPH, which were determined to be less than the applicable laboratory RL in each of the submitted soil samples. Based on laboratory analytical results, soil was not affected above the NMOCD RRAL for chloride horizontally toward the south-southwest beyond sample point S-1C. Impacted soil in the areas characterized by sample points S-1A and S-1B was excavated in an effort to increase the stability of the southern portion of the excavation. Excavated soil was stockpiled on-site, atop an impermeable liner pending final disposition.

Test trench SW-1 was advanced radially toward the southwest from the affected well. During the advancement of the test trench, six (6) soil samples (SW-1A @ 18'. SW-1B @ 10', SW-1B @ 20', SW-1C @ 3', SW-1C @ 12' and SW-1C @ 20') were collected from three (3) sample points and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from 257 mg/kg in soil sample SW-1C @ 3' to 25.8 mg/kg in soil sample SW-1C @ 20'. Soil samples collected from sample points SW-1A and SW-1B were also analyzed for concentrations of BTEX and TPH, which were determined to be less than the applicable laboratory RL in each of the submitted soil samples. Review of laboratory analytical results suggests impacted soil affected above the NMOCD RRAL for chloride in the areas characterized by test trench SW-1 was removed during initial response activities.

Test trench NW-1 was advanced radially toward the northwest from the affected well. During the advancement of the test trench, eleven (11) soil samples (NW-1A @ 18', NW-1B @ 10', NW-1B @ 20', NW-1C @ 3', NW-1C @ 6', NW-1C @ 9', NW-1C @ 20', NW-1D @ 3', NW-1D @ 6', NW-1D

(a) 9' and NW-1D (a) 20') were collected from four (4) sample points and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from 5,700 mg/kg in soil sample NW-1C (a) 20' to 29.5 mg/kg in soil sample NW-1D (a) 3'. Soil samples collected from sample points NW-1A and NW-1B were also analyzed for concentrations of BTEX and TPH, which were determined to be less than the applicable laboratory RL in each of the submitted soil samples. During the advancement of the test trench, evidence of a historical drilling reserve pit were discovered. Based on the presence of the historical drilling reserve pit, further advancement of test trench NW-1 was precluded.

Test trench N-1 was advanced radially toward the north from the affected well. During the advancement of the test trench, four (4) soil samples (N-1A @ 18', N-1B @ 10', N-1B @ 20' and N-1C @ 3') were collected from three (3) sample points and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from 1,260 mg/kg in soil sample N-1A @ 18' to 583 mg/kg in soil sample N-1C @ 3'. Soil samples collected from sample points N-1A and N-1B were also analyzed for concentrations of BTEX and TPH, which were determined to be less than the applicable laboratory RL in each of the submitted soil samples, with the exception of soil sample N-1B @ 10', which exhibited a TPH concentration of 245.3 mg/kg. During the advancement of the test trench, evidence of a historical drilling reserve pit were discovered. Based on the presence of the historical drilling reserve pit further advancement of test trench N-1 was precluded.

Upon advancing test trenches NE-1, SE-2, SE-1, S-2, S-1, SW-1, NW-1, N-1 and stabilizing portions of the open excavation, the excavated area was backfilled to approximately nineteen (19') ft. bgs with locally sourced, non-impacted material, in an effort to mitigate safety hazards and facilitate further investigation of soil impacts from within the open excavation.

On March 29, 2018, upon backfilling the excavated area to nineteen (19) ft. bgs, two (2) test trenches (RP-N and RP-S) were advanced adjacent to the release point in an effort to determine the vertical extent of soil impacts.

Test trench RP-N was advanced approximately ten (10) ft. north of the affected well. During the advancement of the test trench, two (2) soil samples (RP-N @ 28' and RP-N @ 37') were collected and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated soil samples RP-N @ 28' and RP-N @ 37' exhibited chloride concentrations of 3,440 mg/kg and 8,560 mg/kg, respectively. Further advancement of test trench RP-N was precluded due to the limitations of the heavy equipment. Based upon laboratory analytical results, further delineation would be required in the area characterized by test trench RP-N.

Test trench RP-S was advanced approximately ten (10) ft. south of the affected well. During the advancement of the test trench, three (3) soil samples (RP-S @ 28', RP-S @ 31' and RP-S @ 34') were collected and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from 1,830 mg/kg in soil sample RP-S @ 28' to 853 mg/kg in soil sample RP-S @ 34'.

In addition, soil samples were collected from deeper intervals in the areas characterized by sample points N-1A and NW-1A in an effort to further characterize soil impacts in the vicinity of the inferred historic drilling reserve pit. During the advancement of the test trenches, six (6) soil samples (N-1A @ 20', N-1A @ 23', N-1A @ 26',NW-A @ 20', NW-A @ 23' and NW-A @ 29') were collected and

submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from 564 mg/kg in soil sample N-1A @ 20' to 179 mg/kg in soil sample NW-A @ 20'. Laboratory analytical results indicated chloride concentrations were below the NMOCD RRAL in each of the submitted soil samples.

On April 24, 2018, TRC collected one (1) soil sample (S-3) from soil remaining in-situ beneath the former makeshift containment utilized to contain the release and assist in fluid recovery. The collected soil sample was submitted to the laboratory for analysis of chloride concentrations, which were determined to be 10,000 mg/kg. Please reference Attachment 7, Table 1 – Soil Chemistry Table – GJ West Coop Unit #108. Laboratory analytical results are provided as Attachment 9.

## GJ West Coop Unit #011

On March 30, 2018, an initial investigation was conducted at the adjacent release site. During the initial investigation, six (6) test trenches (RP, RP-2 DT-1, DT-2, DT-3 and N) were advanced at the release site in an effort to characterize the vertical extent of soil impacts. Please reference Attachment 4, Figure 3b – Site & Sample Location Map – GJ West Coop Unit #011.

Test trench RP was advanced approximately ten (10) ft. south of the affected well. During the advancement of the test trench, three (3) soil samples (RP @ 3', RP @ 9' and RP @ 18') were collected and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from 1,890 mg/kg in soil sample RP @ 9' to 241 mg/kg in soil sample RP @ 18'. Soil samples RP @ 3' and RP @ 18' were also analyzed for concentrations of BTEX and/or TPH, which were determined to be below the applicable laboratory RL in each of the analyzed soil samples. Based upon laboratory analytical results, soil was not affected above the NMOCD RRAL for chloride beyond eighteen (18) ft. bgs in the area characterized by test trench RP.

Test trench RP-2 was advanced approximately ten (10) ft. north of the affected well. During the advancement of the test trench, three (3) soil samples (RP-2 @ 3', RP-2 @ 6' and RP-2 @ 18') were collected and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from 1,410 mg/kg in soil sample RP-2 @ 3' to 105 mg/kg in soil sample RP-2 @ 18'. Soil samples RP-2 @ 3' and RP-2 @ 18' were also analyzed for concentrations of BTEX and/or TPH, which were determined to be below the applicable laboratory RL in each of the analyzed soil samples. Based upon laboratory analytical results, soil was not affected above the NMOCD RRAL for chloride beyond six (6) ft. bgs in the area characterized by test trench RP-2.

Test trench DT-1 was advanced in the central portion of the release flow path. During the advancement of the test trench, three (3) soil samples (DT-1 @ 3', DT-1 @ 6' and DT-1 @ 18') were collected and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from 2,900 mg/kg in soil sample DT-1 @ 3' to 101 mg/kg in soil sample DT-1 @ 6'. Soil samples DT-1 @ 3' and DT-1 @ 18' were also analyzed for concentrations of BTEX and/or TPH, which were determined to be below the applicable laboratory RL in each of the analyzed soil samples. Based upon laboratory analytical results, soil was not affected above the NMOCD RRAL for chloride beyond six (6) ft. bgs in the area characterized by test trench DT-1.

Test trench DT-2 was advanced in the south-central portion of the release flow path. During the advancement of the test trench, three (3) soil samples (DT-2 @ Surface, DT-2 @ 4' and DT-2 @ 8') were collected and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from 53,100 mg/kg in soil sample DT-2 @ Surface to 16.4 mg/kg in soil sample DT-2 @ 4'. Soil samples DT-2 @ Surface and DT-2 @ 8' were also analyzed for concentrations of BTEX and/or TPH, which were determined to be below the applicable laboratory RL in each of the analyzed soil samples, with the exception of soil sample DT-2 @ SURFACE, which exhibited a TPH concentration of 26.1 mg/kg. Based upon laboratory analytical results, soil was not affected above the NMOCD RRAL for chloride beyond four (4) ft. bgs in the area characterized by test trench DT-2.

Test trench DT-3 was advanced in the southern portion of the release flow path. During the advancement of the test trench, three (3) soil samples (DT-3 @ Surface, DT-3 @ 4' and DT-3 @ 8') were collected and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from 15,600 mg/kg in soil sample DT-3 @ Surface to 7.10 mg/kg in soil sample DT-3 @ 4'. Soil samples DT-3 @ Surface and DT-3 @ 8' were also analyzed for concentrations of BTEX and/or TPH, which were determined to be below the applicable laboratory RL in each of the analyzed soil samples, with the exception of soil sample DT-3 @ SURFACE, which exhibited a TPH concentration of 66.1 mg/kg. Based upon laboratory analytical results, soil was not affected above the NMOCD RRAL for chloride beyond four (4) ft. bgs in the area characterized by test trench DT-3.

Test trench N was advanced in the northern portion of the release flow path, near the affected well. During the advancement of the test trench, three (3) soil samples (N @ 3', N @ 6' and N @ 18') were collected and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from 1,390 mg/kg in soil sample N @ 6' to 178 mg/kg in soil sample N @ 3'. Soil samples N @ 3' and N @ 18' were also analyzed for concentrations of BTEX and/or TPH, which were determined to be below the applicable laboratory RL in each of the analyzed soil samples. Based upon laboratory analytical results, further delineation will be required in the area characterized by test trench N.

In addition, TRC advanced six (6) test trenches (N-2, E, E-2, W, W-2 and S) at the inferred edges of the affected area in an effort to characterize the horizontal extent of soil impacts. During the advancement of the test trenches, eighteen (18) soil samples (N-2 @ 3', N-2 @ 6', N-2 @ 18', E @ 3', E @ 9', E @ 18', E-2 @ 3', E-2 @ 9', E-2 @ 18', W @ 3', W @ 6', W @ 18', W-2 @ Surface, W-2 @ 2', W-2 @ 8', S @ Surface, S @ 2' and S @ 8') were collected and submitted to the laboratory for analysis of chloride concentration. Laboratory analytical results indicated chloride concentrations ranged from 1,840 mg/kg in soil sample S @ Surface to below the applicable laboratory RL in soil sample W-2 @ 8'. Chloride concentrations were below the NMOCD RRAL in each of the submitted soil samples, with the exception of soil sample S @ Surface, which exhibited a chloride concentration of 1,840 mg/kg. Based on laboratory analytical results, further delineation and excavation will be required toward the south in the area characterized by soil sample S @ Surface.

Soil samples N-2 @ 3', N-2 @ 18', E @ 3', E @ 18', E-2 @ 3', E-2 @ 18', W @ 3', W @ 18', W-2 @ Surface, W-2 @ 8', S @ Surface, and S @ 8' were also analyzed for concentrations of BTEX and/or TPH, which were determined to be below the applicable laboratory RL in each of the analyzed soil samples, with the exception of soil sample S @ Surface, which exhibited a TPH concentration of 36.3

mg/kg. BTEX and TPH concentrations were below the NMOCD RRAL in each of the anlayzed soil samples. Please reference Attachment 8, Table 2 – Soil Chemistry Table – GJ West Coop Unit #011.

## PROPOSED CLOSURE STRATEGY

Based on field observations and laboratory analytical results, COG proposes the following field activities designed to advance the GJ West Coop Unit #108 and GJ West Coop Unit #011 release sites toward a BLM- and NMOCD-approved closure:

## GJ West Coop Unit #011

- Utilizing mechanical equipment, excavate impacted soil within the release margins in the area characterized by test trench DT-1 to a depth of approximately four (4) to six (6) ft. bgs or until laboratory analytical results from confirmation soil samples indicate chloride concentrations are below the NMOCD RRAL. Advance the excavation sidewalls until laboratory analytical results indicate chloride concentrations are below the NMOCD RRAL. Excavated soil will be stockpiled on-site, atop an impermeable liner pending final disposition.
- Excavate impacted soil within the release margins in the areas characterized by test trenches DT-2 and DT-3 to a depth of approximately one (1) to four (4) ft. bgs or until laboratory analytical results from confirmation soil samples indicate chloride concentrations are below the NMOCD RRAL. Advance the excavation sidewalls until laboratory analytical results indicate chloride concentrations are below the NMOCD RRAL. Excavated soil will be stockpiled on-site, atop an impermeable liner pending final disposition.
- Excavate impacted soil within the release margins in the areas characterized by test trenches RP, RP-2 and N to a depth of approximately four (4) ft. bgs. Advance the excavation sidewalls until laboratory analytical results indicate chloride concentrations are below the NMOCD RRAL. Excavated soil will be stockpiled on-site, atop an impermeable liner pending final disposition.
- Install a bentonite or polyurethane liner on the floor of the excavation at approximately four (4) ft bgs in the areas characterized by test trenches RP, RP-2 and N. This engineering control is designed to mitigate the vertical migration of contaminants left in-situ. During the installation of the liner an approximate six (6)-inch layer of "pad sand" will be installed above and below the liner in an effort to maintain its integrity during backfilling activities.
- Upon installing the liner on the floor of the excavated area, an eight (8)-inch PVC conduit will be installed, and extended vertically to the surface, in the area requiring additional vertical delineation, represented by test trench N.
- Upon receiving laboratory analytical results from confirmation soil samples and installing the bentonite or polyurethane liner and associated PVC casing, backfill the excavated area with locally sourced, non-impacted "like" material.
- Utilizing mechanical equipment, advance one (1) investigative soil bore through the established PVC casing in an effort to determine the vertical extent of chloride impact. The investigative soil bore will be advanced until chloride field screen results suggests two (2) consecutive soil samples collected at five (5) ft. intervals exhibit chloride concentrations below the NMOCD RRAL; soil samples will also be collected for confirmation laboratory analysis. Please reference Attachment 6, Figure 4b Proposed Excavation and Liner Installation Map GJ West Coop Unit #011.

## GJ West Coop Unit #108

- Advance the upper four (4) ft. of the current open excavation sidewall in the area characterized by test trench SE-2 to beyond sample point SE-2E. Excavated soil will be stockpiled on-site, atop an impermeable liner pending final disposition.
- Advance the upper four (4) ft. of the current open excavation sidewall in the area characterized by test trench NE-1 to sample point NE-1C. Excavated soil will be placed into a separate soil stockpile, pending laboratory analysis for potential use as "clean" backfill.
- Advance the upper four (4) ft. of the current open excavation sidewall in the area characterized by test trench N-1 to beyond sample point N-1C. Excavated soil will be placed into a separate soil stockpile, pending laboratory analysis for potential use as "clean" backfill.
- Advance the upper four (4) ft. of the current open excavation sidewall in the area characterized by test trench NW-1 to sample point NW-1C. Excavated soil will be placed into a separate soil stockpile, pending laboratory analysis for potential use as "clean" backfill.
- Laboratory analytical results indicated further excavation is not required in the area represented by test trench SW.
- Advance the upper four (4) ft. of the current open excavation sidewall in the area characterized by test trench S-1 to sample point S-1C. Excavated soil will be placed into a separate soil stockpile, pending laboratory analysis for potential use as "clean" backfill.
- Advance the upper four (4) ft. of the current open excavation sidewall in the area characterized by soil sample S-3 @ 4' to beyond sample point S-2. Excavated soil will be stockpiled on-site, atop an impermeable liner pending final disposition.
- Advance the upper four (4) ft. of the current open excavation sidewall in the area characterized by test trench SE-1 to beyond sample point SE-1C. Excavated soil will stockpiled on-site, atop an impermeable liner pending final disposition.
- Upon advancing the excavation sidewalls horizontally at four (4) ft. bgs, effectively "benching" the open excavation, and receiving laboratory analytical results from confirmation soil samples, install a bentonite or polyurethane liner on the floor of the excavated area at approximately nineteen (19) ft. bgs. This engineering control is designed to mitigate the vertical migration of contaminants. During the installation of the liner an approximate six (6)-inch layer of "pad sand" will be installed above and below the liner in an effort to maintain its integrity during backfilling activities.
- Upon installing the liner on the floor of the excavated area, an eight (8)-inch PVC conduit will be installed, and extended vertically to the surface, in the area requiring additional vertical delineation, represented by test trench RP-N.
- Upon receiving laboratory analytical results from confirmation soil samples and installing the bentonite or polyurethane liner and associated PVC casing, backfill the excavated area to approximately four (4) ft. bgs utilizing stockpiled soil generated from "benching" the subject excavation, excavation activities associated with the remediation of GJ West Coop Unit #11 and locally sourced non-impacted material.
- Upon backfilling the excavated area to four (4) ft. bgs, install a second bentonite or polyurethane liner at four (4) ft. bgs atop impacted soil exhibiting chloride concentrations above the NMOCD RRAL. The liner will be extended vertically along the excavation sidewalls in the area of the inferred historical drilling reserve pit in an effort to limit the amount of moisture shed toward the north in the vicinity of the historical drilling reserve pit. This engineering control is designed to mitigate the vertical migration of contaminants left in-situ along with contaminants within

portions of the proposed fill material. During the installation of the liner an approximate six (6)inch layer of "pad sand" will be installed above and below the liner in an effort to maintain its integrity during backfilling activities.

- The eight (8)-inch PVC conduit will be extended through the second bentonite or polyurethane liner, to the surface for the advancement of a proposed investigative soil boring.
- Upon installing the second bentonite or polyurethane liner, backfill the remaining excavated area with locally sourced, non-impacted topsoil.
- Utilizing mechanical equipment, advance one (1) investigative soil bore through the established PVC casing in an effort to determine the vertical extent of chloride impact. The investigative soil bore will be advanced until chloride field screen results suggests two consecutive soil samples collected at five (5) ft. intervals exhibit chloride concentrations below the NMOCD RRAL; soil samples will also be collected for confirmation laboratory analysis. Please reference Attachment 6, Figure 4a – Proposed Excavation and Liner Installation Map – GJ West Coop Unit #108.

In the event soil is affected above the NMOCD RRAL at considerable depth, COG will be prepared to convert the proposed investigative soil borings into groundwater monitoring wells.

COG is prepared to begin the activities outlined in this *Soil Investigation Summary and Proposed Remediation Workplan* on receiving NMOCD and BLM approval.

If you have any questions, or if additional information is required, please feel free to call me at 432-520-7720 (office) or 432-664-6699 (cell).

Thank you,

Jael Joung

Joel Lowry Senior Project Manager TRC Environmental Corporation

Curt D Sonley

Curt Stanley Senior Project Manager TRC Environmental Corporation

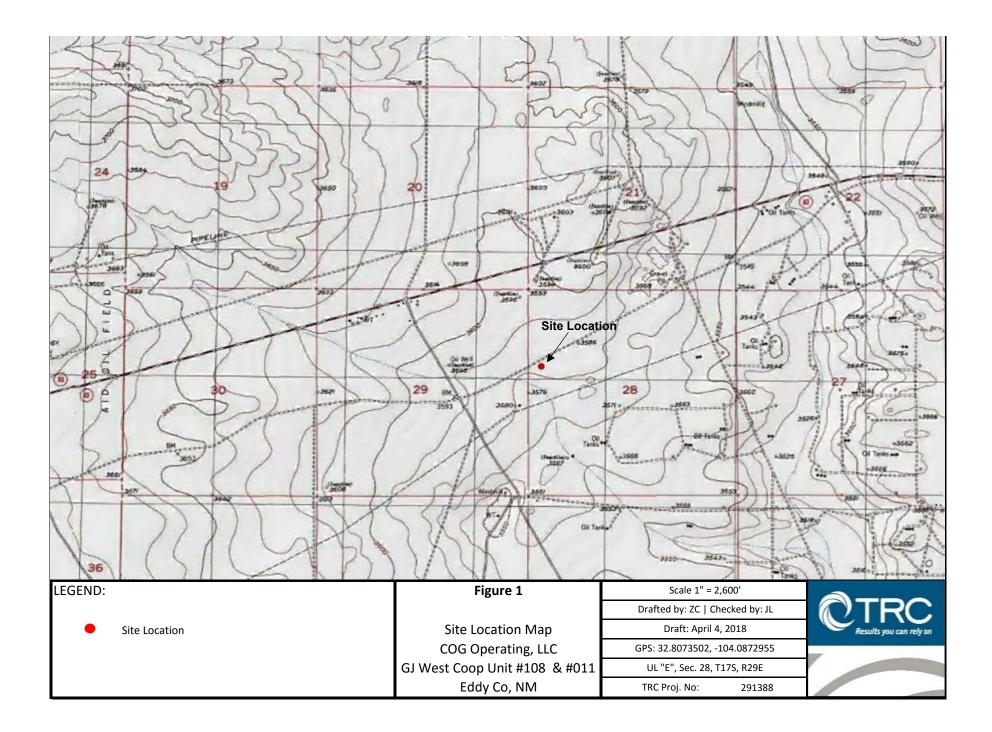
### Attachments

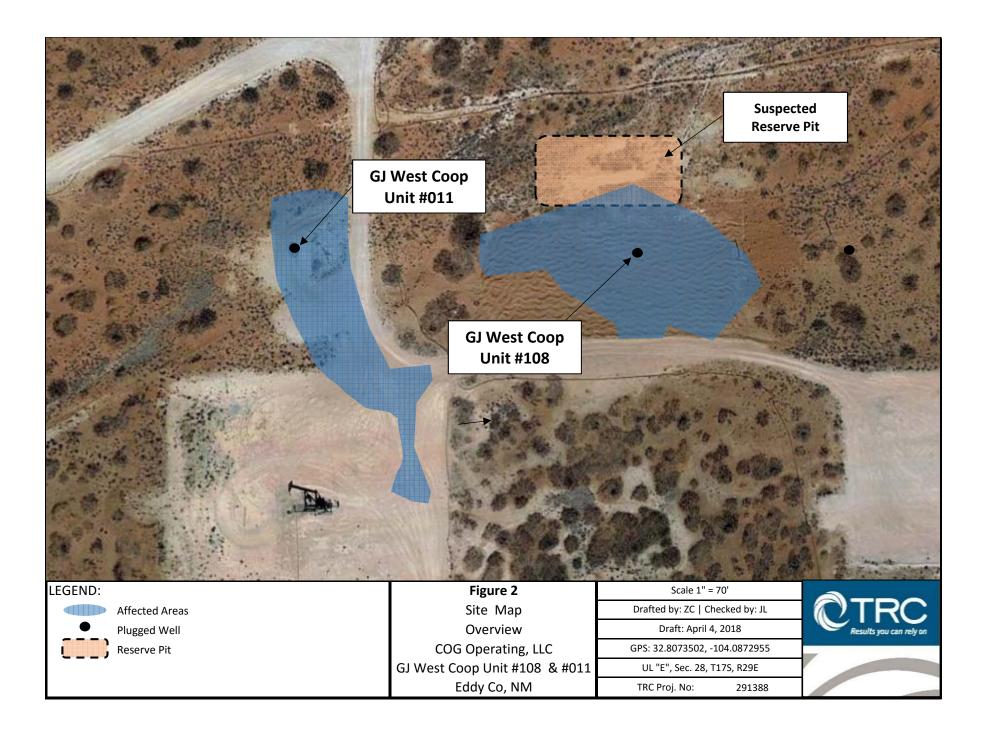
- Attachment 1: Figure 1 Site Location Map
- Attachment 2: Figure 2 Site Map Overview
- Attachment 3: Figure 3a Site & Sample Location Map GJ West Coop Unit #108
- Attachment 4: Figure 3b Site & Sample Location Map GJ West Coop Unit #011
- Attachment 5: Figure 4a Proposed Excavation and Liner Installation Map GJ West Coop Unit #108
- Attachment 6: Figure 4b Proposed Excavation and Liner Installation Map GJ West Coop Unit #011
- Attachment 7: Table 1 Soil Chemistry Table GJ West Coop Unit #108
- Attachment 8: Table 2 Soil Chemistry Table GJ West Coop Unit #011
- Attachment 9: Laboratory Analytical Results
- Attachment 10: Photographic Log

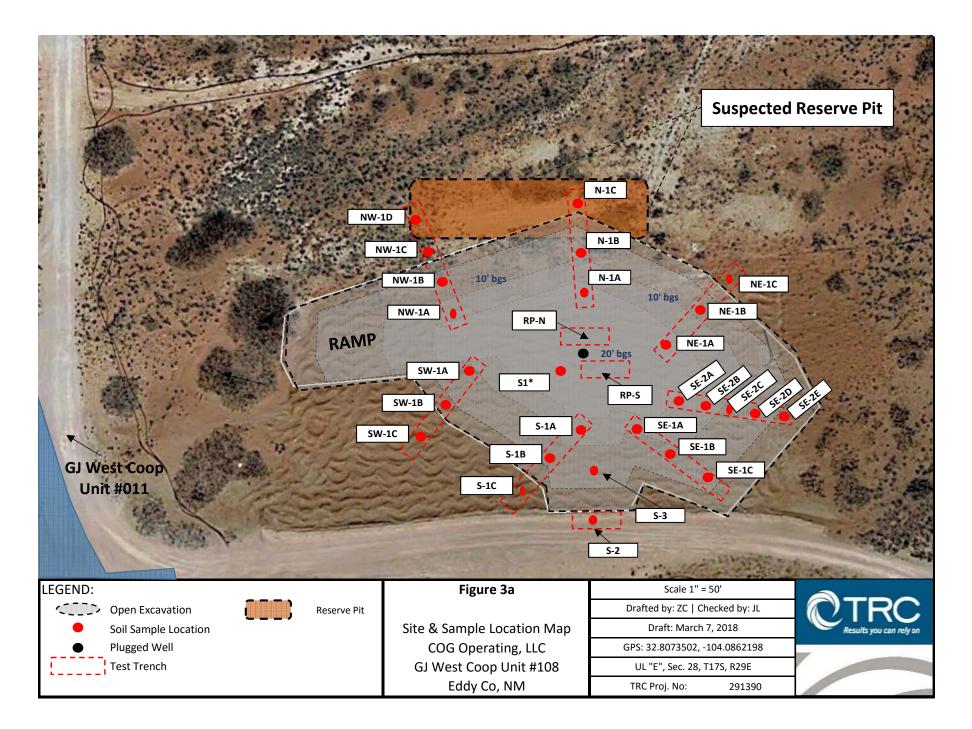
Attachment 11: Release Notification and Corrective Action (Form C-141) - GJ West Coop Unit #108 Attachment 12: Release Notification and Corrective Action (Form C-141) – GJ West Coop Unit #011

cc: Rebecca Haskell COG Operating, LLC 600 W. Illinois Avenue Midland, Texas 79701

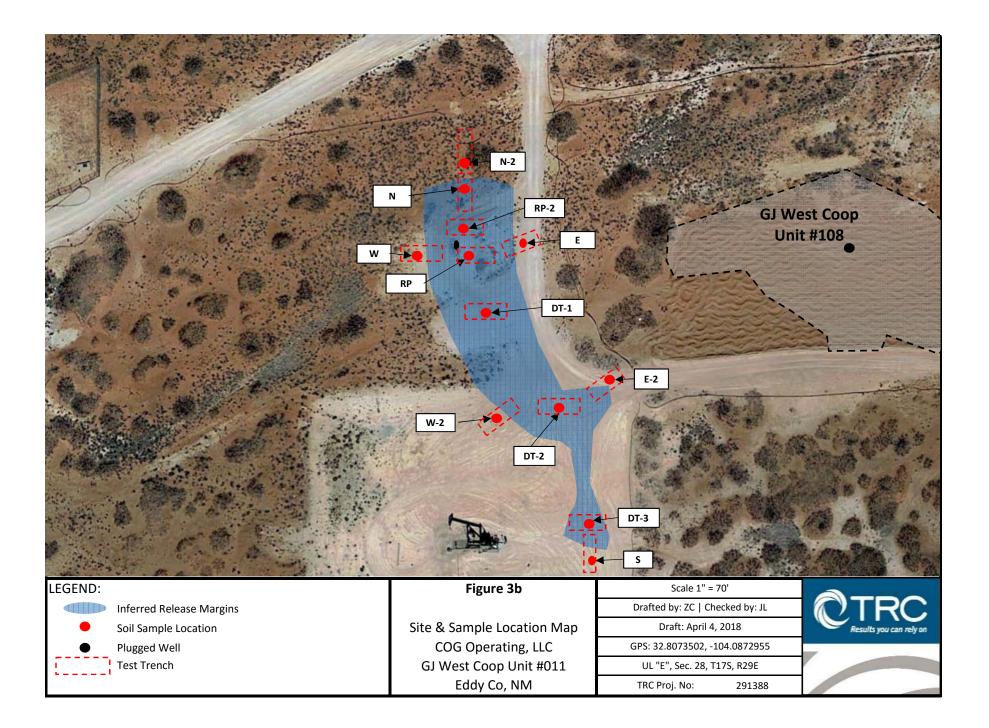
File

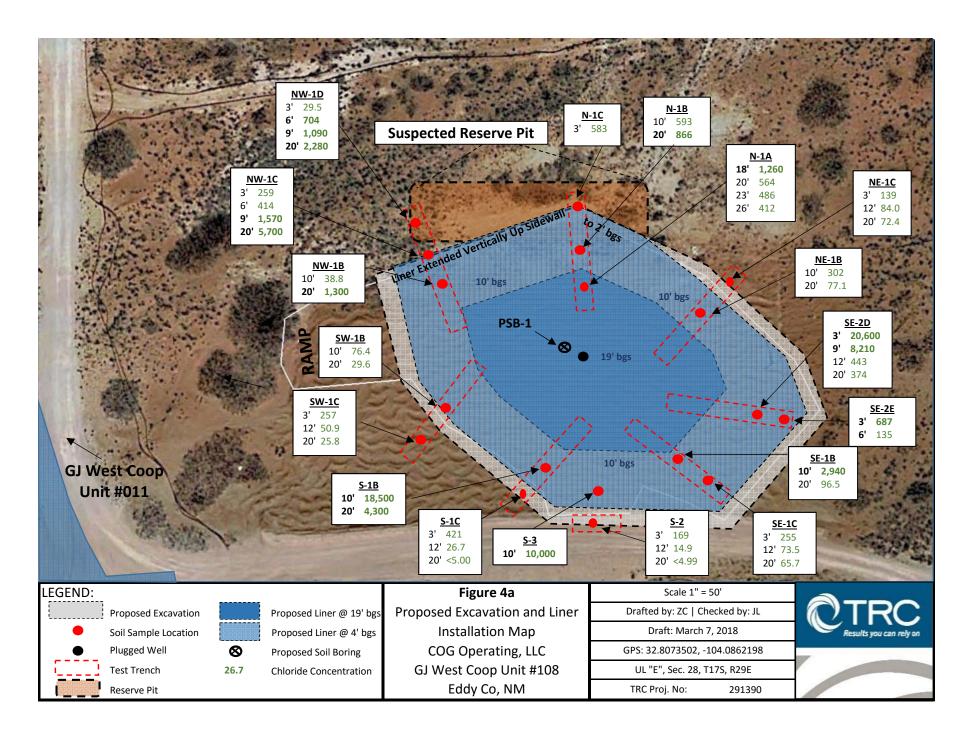




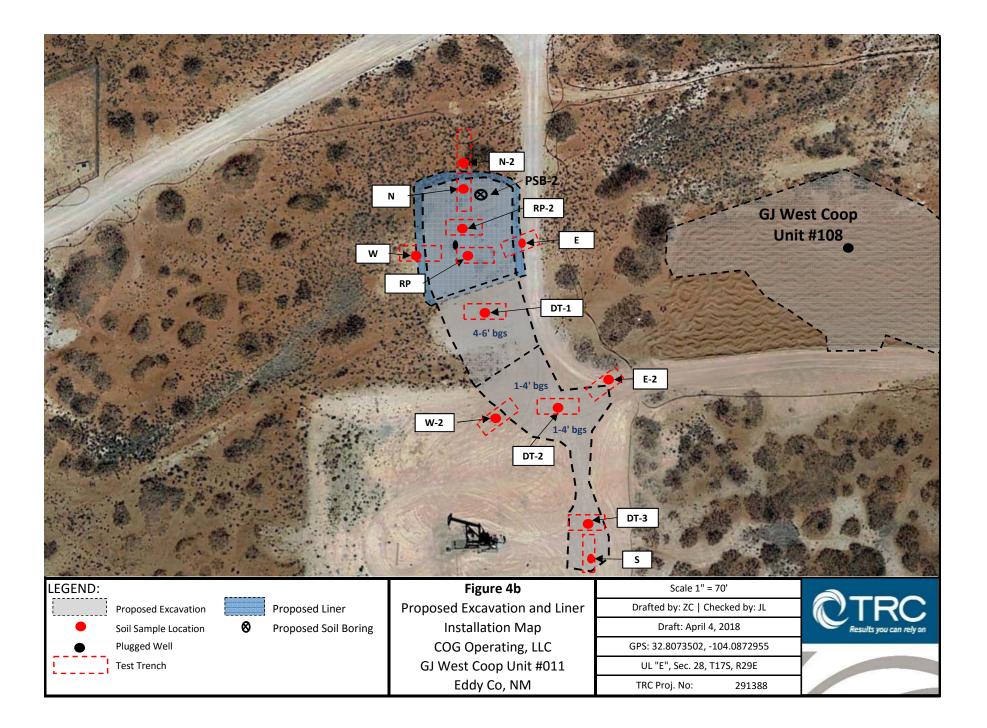


\* - Samples at this location collected by COG personnel





\* - Samples at this location collected by COG personnel



## TABLE 1

## SOIL CHEMISTRY TABLE

#### COG OPERATING, LLC GJ WEST COOP UNIT #108 EDDY COUNTY, NEW MEXICO

						HODS: SW 846	are reported in n 8021b			METHOD:	SW 8015M		E 300.1/4500 Clb
SAMPLE LOCATION	DEPTH	SAMPLE DATE	SOIL STATUS	BENZENE	TOLUENE	ETHYL- BENZENE	TOTAL XYLENES	TOTAL BTEX	TPH GRO C <sub>6</sub> -C <sub>10</sub>	TPH DRO C <sub>10</sub> -C <sub>28</sub>	TPH ORO C <sub>28</sub> -C <sub>35</sub>	TOTAL TPH C <sub>6</sub> -C <sub>35</sub>	CHLORIDE
S1 3'-4'	3'-4'	8/14/2017	Excavated	-	-	-	-	-	-	-	-	-	992
S1 5'-6' S 13'-14'	5'-6'	8/14/2017 8/14/2017	Excavated Excavated	-	-	-	-	-	-	-	-	-	28,000 7,200
S 16'-17'	16'-17'	8/14/2017	Excavated	-	-	-	-	-	-	-	-	-	21,200
RP-N @ 28'	28'	3/29/2018	In-Situ	-	-	-	-	-	-	-	-	-	3,440
RP-N @ 37'	37'	3/29/2018	In-Situ	-	-	-	-	-	-	-	-	-	8,560
RP-S @ 28'	28'	3/29/2018	In-Situ	-	-	-	-	-	-	-	-	-	1,830
RP-S @ 31' RP-S @ 34'	31' 34'	3/29/2018 3/29/2018	In-Situ In-Situ	-	-	-	-	-	-	-	-	-	1,030 853
SE-1A @ 18'	18'	3/22/2018	In-Situ	< 0.00200	< 0.00200	< 0.00200	< 0.00200	< 0.00200	<15.0	<15.0	<15.0	<15.0	791
SE-1B @ 10'	10'	3/22/2018	In-Situ	< 0.00199	< 0.00199	< 0.00199	< 0.00199	< 0.00199	<15.0	<15.0	<15.0	<15.0	2,940
SE-1B @ 20'	20'	3/22/2018	In-Situ	< 0.00200	< 0.00200	< 0.00200	< 0.00200	< 0.00200	<15.0	<15.0	<15.0	<15.0	96.5
SE-1C @ 3'	3'	3/22/2018	In-Situ	-	-	-	-	-	-	-	-	-	255
SE-1C @ 12' SE-1C @ 20'	12' 20'	3/22/2018 3/22/2018	In-Situ In-Situ	-	-	-	-	-	-	-	-	-	73.5 65.7
SE-1C @ 20 SE-2A @ 18'	18'	3/22/2018	In-Situ In-Situ	< 0.00200	< 0.00200	<0.00200	< 0.00200	- <0.00200	<15.0	<15.0	<15.0	<15.0	409
SE-2R @ 18 SE-2B @ 10'	10'	3/22/2018	In-Situ	< 0.00200	< 0.00200	< 0.00200	< 0.00200	< 0.00200	<15.0	<15.0	<15.0	<15.0	409
SE-2B @ 10 SE-2B @ 20'	20'	3/22/2018	In-Situ	< 0.00202	< 0.00201	< 0.00202	< 0.00202	< 0.00201	<14.9	<14.9	<14.9	<14.9	48.7
SE-2C @ 3'	3'	3/22/2018	In-Situ	-	-	-	-	-	-	-	-	-	4,570
SE-2C @ 6'	6'	3/22/2018	In-Situ	-	-	-	-	-	-	-	-	-	96.8
SE-2C @ 12' SE-2C @ 20'	12' 20'	3/22/2018 3/22/2018	In-Situ In-Situ	-	-	-	-	-	-	-	-	-	267 423
SE-2C @ 20 SE-2D @ 3'	3'	3/22/2018	In-Situ In-Situ	-	-	-	-	-	-	-	-	-	423 20,600
SE-2D @ 3 SE-2D @ 9'	<u> </u>	3/22/2018	In-Situ In-Situ	-	-	-	-	-	-	-	-	-	8,210
SE-2D @ 12'	12'	3/22/2018	In-Situ	-	-	-	-	-	-	-	-	-	443
SE-2D @ 20'	20'	3/22/2018	In-Situ	-	-	-	-	-	-	-	-	-	374
SE-2E @ 3'	3'	3/22/2018	In-Situ	-	-	-	-	-	-	-	-	-	687 125
SE-2E @ 6' NE-1A @ 18'	18'	3/22/2018 3/22/2018	In-Situ In-Situ	- <0.00199	- <0.00199	- <0.00199	- <0.00199	- <0.00199	<15.0	- <15.0	<15.0	<15.0	135 723
NE-1A @ 18 NE-1B @ 10'	10'	3/22/2018	In-Situ In-Situ	< 0.00199	< 0.00199	<0.00199	< 0.00199	< 0.00199	<15.0	<15.0	<15.0	<15.0	302
NE-1B @ 20'	20'	3/22/2018	In-Situ	< 0.00200	< 0.00200	< 0.00201	< 0.00200	< 0.00200	<14.9	<14.9	<14.9	<14.9	77.1
NE-1C @ 3'	3'	3/22/2018	In-Situ	-	-	-	-	-	-	-	-	-	139
NE-1C @ 12'	12'	3/22/2018	In-Situ	-	-	-	-	-	-	-	-	-	84.0
NE-1C @ 20'	20'	3/22/2018	In-Situ	-	-	-	-	-	-	-	-	-	72.4
N-1A @ 18'	18'	3/22/2018	In-Situ	< 0.00201	< 0.00201	< 0.00201	< 0.00201	< 0.00201	<15.0	<15.0	<15.0	<15.0	1,260
N-1A @ 20' N-1A @ 23'	20'	3/29/2018 3/29/2018	In-Situ In-Situ	-	-	-	-	-	-	-	-	-	564 486
N-1A @ 26'	26'	3/29/2018	In-Situ	-	-	-	-	-	-	-	-	-	412
N-1B @ 10'	10'	3/22/2018	In-Situ	< 0.00199	< 0.00199	< 0.00199	< 0.00199	< 0.00199	<15.0	216	29.3	245.3	593
N-1B @ 20'	20'	3/22/2018	In-Situ	< 0.00200	< 0.00200	< 0.00200	< 0.00200	< 0.00200	<15.0	<15.0	<15.0	<15.0	866
N-1C @ 3'	3'	3/22/2018	In-Situ	-	-	-	-	-	-	-	-	-	583
NW-1A @ 18'	18'	3/23/2018	In-Situ	< 0.00201	< 0.00201	< 0.00201	< 0.00201	< 0.00201	<15.0	<15.0	<15.0	<15.0	769
NW-A @ 20' NW-A @ 23'	20'	3/29/2018 3/29/2018	In-Situ In-Situ	-	-	-	-	-	-	-	-	-	179 375
NW-A @ 25'	29'	3/29/2018	In-Situ	-	-	-	-	-	-	-	-	-	265
NW-1B @ 10'	10'	3/23/2018	In-Situ	< 0.00201	< 0.00201	< 0.00201	< 0.00201	< 0.00201	<15.0	<15.0	<15.0	<15.0	38.8
NW-1B @ 20'	20'	3/23/2018	In-Situ	< 0.00199	< 0.00199	< 0.00199	< 0.00199	< 0.00199	<15.0	<15.0	<15.0	<15.0	1,300
NW-1C @ 3'	3'	3/23/2018	In-Situ	-	-	-	-	-	-	-	-	-	259
NW-1C @ 6' NW-1C @ 9'	6' 9'	3/23/2018 3/23/2018	In-Situ In-Situ	-	-	-	-	-	-	-	-	-	414 1,570
NW-IC @ 20'	20'	3/23/2018	In-Situ In-Situ	-	-	-	-	-	-	-	-	-	5,700
NW-1D @ 3'	3'	3/23/2018	In-Situ	-	-	-	-	-	-	-	-	-	29.5
NW-1D @ 6'	6'	3/23/2018	In-Situ	-	-	-	-	-	-	-	-	-	704
NW-1D @ 9'	9' 20'	3/23/2018	In-Situ	-	-	-	-	-	-	-	-	-	1,090
NW-1D @ 20' SW-1A @ 18'	20'	3/23/2018 3/23/2018	In-Situ In-Situ	- <0.00200	- <0.00200	- <0.00200	- <0.00200	- <0.00200	- <14.9	- <14.9	- <14.9	- <14.9	<b>2,280</b> 62.1
SW-1A @ 18' SW-1B @ 10'	10'	3/23/2018	In-Situ In-Situ	< 0.00200	< 0.00200	<0.00200	<0.00200	< 0.00200	<14.9	<14.9	<14.9	<14.9	76.4
SW-1B @ 10 SW-1B @ 20'	20'	3/23/2018	In-Situ In-Situ	<0.00200	< 0.00200	<0.00200	<0.00200	< 0.00200	<15.0	<15.0	<15.0	<15.0	29.6
SW-1C @ 3'	3'	3/23/2018	In-Situ	-	-	-	-	-	-	-	-	-	257
SW-1C @ 12'	12'	3/23/2018	In-Situ	-	-	-	-	-	-	-	-	-	50.9
SW-1C @ 20'	20'	3/23/2018	In-Situ	-	-	-	-	-	-	-	-	-	25.8
S-1A @ 18'	18'	3/23/2018			< 0.00199	< 0.00199	< 0.00199	< 0.00199	<15.0	<15.0	<15.0	<15.0	7,660
S-1B @ 10' S-1B @ 20'	20'	3/23/2018 3/23/2018	Excavated Excavated	<0.00200 <0.00201	<0.00200 <0.00201	<0.00200 <0.00201	<0.00200 <0.00201	<0.00200 <0.00201	<15.0 <15.0	<15.0 <15.0	<15.0 <15.0	<15.0 <15.0	18,500 4,300
S-1B @ 20 S-1C @ 3'	3'	3/23/2018	In-Situ	-	-							-15.0	421
S-1C @ 12'	12'	3/23/2018	In-Situ In-Situ	-	-	-	-	-	-	-	-	-	26.7
S-1C @ 20'	20'	3/23/2018	In-Situ	-	-	-	-	-	-	-	-	-	< 5.00
S-2 @ 3'	3'	3/23/2018	In-Situ	-	-	-	-	-	-	-	-	-	169
S-2 @ 12' S-2 @ 20'	12' 20'	3/23/2018 3/23/2018	In-Situ In-Situ	-	-	-	-	-	-	-	-	-	14.9 <4.92
S-2 @ 20	10'	4/24/2018	In-Situ In-Situ	-	-	-	-	-	-	-	-	-	<4.92 10,000
													10,000
NMOCD Re		Darren H	am A										

#### TABLE 2

#### SOIL CHEMISTRY TABLE

#### COG OPERATING, LLC GJ WEST COOP UNIT #011 EDDY COUNTY, NEW MEXICO

					All conce	ntrations are repo	orted in mg/kg						
					MET	HODS: SW 846	-8021b			METHOD:	SW 8015M		E 300.1
SAMPLE LOCATION	DEPTH	SAMPLE DATE	SOIL STATUS	BENZENE	TOLUENE	ETHYL- BENZENE	TOTAL XYLENES	TOTAL BTEX	TPH GRO	TPH DRO	TPH ORO	TOTAL TPH	CHLORIDE
									C <sub>6</sub> -C <sub>10</sub>	C <sub>10</sub> -C <sub>28</sub>	C <sub>28</sub> -C <sub>35</sub>	C <sub>6</sub> -C <sub>35</sub>	
RP @ 3'	3'	3/30/2018	In-Situ	< 0.00199	< 0.00199	< 0.00199	< 0.00199	< 0.00199	<15.0	<15.0	<15.0	<15	977
RP @ 9'	9'	3/30/2018	In-Situ	-	-	-	-	-	-	-	-	-	1,890
RP @ 18'	18'	3/30/2018	In-Situ	-	-	-	-	-	<15.0	<15.0	<15.0	<15	241
RP-2 @ 3'	3'	3/30/2018	In-Situ	< 0.00198	< 0.00198	< 0.00198	< 0.00198	< 0.00198	<15.0	<15.0	<15.0	<15	1,410
RP-2 @ 6'	6'	3/30/2018	In-Situ	-	-	-	-	-	-	-	-	-	145
RP-2 @ 18'	18'	3/30/2018	In-Situ	-	-	-	-	-	<15.0	<15.0	<15.0	<15	105
DT -1 @ 3'	3'	4/2/2018	In-Situ	< 0.00200	< 0.00200	< 0.00200	< 0.002	< 0.002	<15.0	<15.0	<15.0	<15.0	2,900
DT -1 @ 6'	6'	4/2/2018	In-Situ	-	-	-	-	-	-	-	-	-	101
DT -1 @ 18'	18'	4/2/2018	In-Situ	-	-	-	-	-	<14.9	<14.9	<14.9	<14.9	124
DT -2 @ SURFACE	SURFACE	4/2/2018	In-Situ	< 0.00200	< 0.00200	< 0.00200	< 0.002	< 0.002	<15.0	26.1	<15.0	26.1	53,100
DT -2 @ 4'	4'	4/2/2018	In-Situ	-	-	-	-	-	-	-	-	-	16.4
DT -2 @ 8'	8'	4/2/2018	In-Situ	-	-	-	-	-	<14.9	<14.9	<14.9	<14.9	19.4
DT -3 @ SURFACE	SURFACE	4/2/2018	In-Situ	< 0.00198	< 0.00198	< 0.00198	< 0.00198	< 0.00198	<15.0	46.2	19.9	66.1	15,600
DT -3 @ 4'	4'	4/2/2018	In-Situ	-	-	-	-	-	-	-	-	-	7.10
DT -3 @ 8'	8'	4/2/2018	In-Situ	-	-	-	-	-	<15.0	<15.0	<15.0	<15	7.30
N @ 3'	3'	3/30/2018	In-Situ	< 0.00201	< 0.00201	< 0.00201	< 0.00201	< 0.00201	<14.9	<14.9	<14.9	<14.9	178
N @ 6'	6'	3/30/2018	In-Situ	-	-	-	-	-	-	-	-	-	1,390
N @ 18'	18'	3/30/2018	In-Situ	-	-	-	-	-	<15.0	<15.0	<15.0	<15	1,310
N-2 @ 3'	3'	3/30/2018	In-Situ	< 0.00201	< 0.00201	< 0.00201	< 0.00201	< 0.00201	<15.0	<15.0	<15.0	<15	21.6
N-2 @ 6'	6'	3/30/2018	In-Situ	-	-	-	-	-	-	-	-	-	322
N-2 @ 18'	18'	3/30/2018	In-Situ	-	-	-	-	-	<15.0	<15.0	<15.0	<15	119
E @ 3'	3'	3/30/2018	In-Situ	< 0.00202	< 0.00202	< 0.00202	< 0.00202	< 0.00202	<15.0	<15.0	<15.0	<15	214
E @ 9'	9'	3/30/2018	In-Situ	-	-	-	-	-	-	-	-	-	84.1
E @ 18'	18'	3/30/2018	In-Situ	-	-	-	-	-	<14.9	<14.9	<14.9	<14.9	36.0
E-2 @ 3'	3'	3/30/2018	In-Situ	< 0.00198	< 0.00198	< 0.00198	< 0.00198	< 0.00198	<15.0	<15.0	<15.0	<15	82.7
E-2 @ 9'	9'	3/30/2018	In-Situ	-	-	-	-	-	-	-	-	-	54.6
E-2 @ 18'	18'	3/30/2018	In-Situ	-	-	-	-	-	<15.0	<15.0	<15.0	<15	23.8
W @ 3'	3'	3/30/2018	In-Situ	< 0.00200	< 0.00200	< 0.00200	< 0.002	< 0.002	<15.0	<15.0	<15.0	<15	78.7
W @ 6'	6'	3/30/2018	In-Situ	-	-	-	-	-					245
W @ 18'	18'	3/30/2018	In-Situ	-	-	-	-	-	<15.0	<15.0	<15.0	<15	73.4
W-2 @ SURFACE	SURFACE	3/30/2018	In-Situ	< 0.00202	< 0.00202	< 0.00202	< 0.00202	< 0.00202	<15.0	<15.0	<15.0	<15.0	253
W-2 @ 2'	2'	3/30/2018	In-Situ	-	-	-	-	-	-	-	-	-	9.55
W-2 @ 8'	8'	3/30/2018	In-Situ	-	-	-	-	-	<15.0	<15.0	<15.0	<15	<4.95
S @ SURFACE	SURFACE	4/2/2018	In-Situ	< 0.00201	< 0.00201	< 0.00201	< 0.00201	< 0.00201	<15.0	36.3	<15.0	36.3	1,840
S @ 2'	2'	4/2/2018	In-Situ	-	-	-	-	-	-	-	-	-	34.4
S @ 8'	8'	4/2/2018	In-Situ	-	-	-	-	-	<14.9	<14.9	<14.9	<14.9	11.8
NMOCD Recomme	ended Remed	liation Actio	on Level	10	-	-	-	50	-	-	-	5,000	600



August 22, 2017

AARON LIEB

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: GJ WEST COOP

Enclosed are the results of analyses for samples received by the laboratory on 08/16/17 11:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at <a href="https://www.tceq.texas.gov/field/ga/lab\_accred\_certif.html">www.tceq.texas.gov/field/ga/lab\_accred\_certif.html</a>.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keine

Celey D. Keene Lab Director/Quality Manager



#### Analytical Results For:

COG OPER	RATING
AARON LI	EB
P. O. BOX	1630
ARTESIA I	NM, 88210
Fax To:	NONE

Received:	08/16/2017	Sampling Date:	08/14/2017
Reported:	08/22/2017	Sampling Type:	Soil
Project Name:	GJ WEST COOP	Sampling Condition:	Cool & Intact
Project Number:	UNIT #108	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

#### Sample ID: S1 - 3'- 4' (H702168-01)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	992	16.0	08/19/2017	ND	400	100	400	3.92	

#### Sample ID: S1 - 5'- 6' (H702168-02)

Chloride, SM4500Cl-B	mg,	′kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	28000	16.0	08/19/2017	ND	400	100	400	3.92	

#### Sample ID: S1 - 13'- 14' (H702168-03)

Chloride, SM4500Cl-B	mg	/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	7200	16.0	08/19/2017	ND	400	100	400	3.92	

#### Sample ID: S1 - 16'- 17' (H702168-04)

Chloride, SM4500Cl-B	mg/	′kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	21200	16.0	08/19/2017	ND	416	104	400	0.00	QM-07

#### **Cardinal Laboratories**

#### \*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatscever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, whot limitation, business interruptions, loss of gronts incurred by client, its subsidiaries, affiliates or successor arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



#### **Notes and Definitions**

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500CI-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

#### **Cardinal Laboratories**

#### \*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any daim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatscever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including those of use, or loss of profits incurred by client, its subsidiaries, affiliates or successor arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST         ILIC       ANALYSIS REQUEST         State: NM       ZIP       ROL#:       O Attr:       ROLET         Foll       ANALYSIS REQUEST         Following LC       Analysis Request         Following LC       Analysis Request         Following LC       State: TX			S1-13'-14'	S1-5'-6'	S1-3'-4'	FOR LAB L.D. Sample I.D.	Sampler Name: Aaron Lieb		Ľ	Project #:	Phone #: 575-748-1553	City: Artesia	Address: 2407 Pecos Avenue	Project Manager: Aaron Lieb	Company Name: COG Operating LLC	101 East Marland, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476	
Zip     88210     Rull     TO       Zip     88210     Attn:     Robert McNeill       Address:     600 W Illinois       City:     Malland       State:     TX       Phone #:     (432) 221-0388       Fax #:     PRESERV       WASTEWATER     SoliL       Phone #:     (432) 221-0388       Fax #:     PRESERV       SoliL     OIL       SLUDGE     TIME       WASTEWATER     NATRIX       PRESERV     SampLing       Phone #:     (432) 221-0388       Fax #:     DATE       TIME     NATE       WASTEWATER     NATE       NATE     NATE       Image: SoliL     OIL       SLUDGE     TIME       WASTEWATER     NATE       ACID/BASE:     NATE       Image: SoliL     OIL       SLUDGE     NATE       Image: SoliL     OIL       N     NATE       Image: SoliL     NATE       Image: SoliL     NATE       Image: SoliL     NATE       Image: SoliL     NATIT       Image: SoliL     NATIT       Image: SoliL     NATIT       Image: SoliL     NATIT       Image: SoliL	lient's exclusive remedy for any recurse whatsoever shall be dee sequental damages, including we be or services hereunder by Cara Date: b - 16 - 17	-17'	-14'	<u>6</u>				Č.	108	Project Owner:	Fax #:	State: NM			LC	Hobbs, NM 8824 AX (575) 393-247	
CHAIN-OF-CUSTODY AND ANALYSIS REQUEST       PIO.#:     ANALYSIS REQUEST       Pione #:     Robert MiNelli       Address:     Robert MiNelli       Address:     Robert MiNelli       Address:     Robert Mineli       Fax #:     Midland       PRESERV     SAMPLING       PRESERV     SAMPLING       PRESERV     SAMPLING       Right 17     10:30AM       X     8/14/17       10:30AM     X       X     1       X     1       X	claim arising whether based in cont mend waked unless made in writing thout limitation, business interruptio dirinal, regardless of whether such cl fraction of the such cl Received By:	×	×	×		# CONTAINERS GROUNDWATER WASTEWATER SOIL OIL										6 O	
CHAIN-OF-CUSTODY AND ANALYSIS REQUE         ANALYSIS REQUEST         COG Operating LLC         Robert Moneil       Analysis Request         Bio W Illinois       Milliand         SAMPLING       E       E         SAMPLING       E       E       Inloide         Image: Regular display       Image: Regular display       Image: Regular display       Image: Regular display         SAMPLING       E       E       Difference       Image: Regular display       Image: Regular display         SAMPLING       E       E       Difference       E       E       Image: Regular display       Image: Regular display         SAMPLING       E       E       E       Difference       E       E       E       Image: Regular display       I	and or tort, shall be limited t and received by Cardinals rs, loss of use, or loss of pr aim is based upon any of th		×	×	×	OTHER :	ΓdX #.	Phone #: (43	State: TX	City:	Address:	Attn:	Company:	P.O. #:	<b></b>		
ANALYSIS REQUE       Ining LLC       Ining LLC     ANALYSIS REQUEST       Ining LLC     Ining LLC       Ining LLC     Ini	thin 30 days after offs incurred by cil	8/14/17	8/14/17	8/14/17	8/14/17	DATE		2) 221-0388	Zip: 7970	Midland	600 W Illi	Robert McN	COG Operat		LL 70		
ANALYSIS REQUEST	to the client for the completion of the ent, its subsidiarie ent, its subsidiarie ent, its subsidiarie ent, its subsidiarie ent, its subsidiarie phone Result: REMARKS: alieb@con rqrubbs@ rqrubbs@ rhaskell@	10:30AM	10:30AM	10:30AM	10:30AM	TIME			-		nois	leill	ting LLC				CHAIN-
ANALYSIS REQUEST	e applicable s, s, concho concho concho					BTEX											OF-
ANALYSIS REQUEST	l Yes								-								SUC
Add'I Phone #:	No	×	×	×	×	Chloride									A		TODY /
	Add'l Phone #														NALYSIS		AND AN
															REQUES		ALYSIS
					2							_					REQUE

Page 4 of 4

# **Analytical Report 580869**

for TRC Solutions, Inc

Project Manager: Joel Lowry GJ Eddy Coop Unit #108

## 05-APR-18

Collected By: Client





## 1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215-18-24), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142)

> Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12) Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-18-14) Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757) Xenco-Atlanta (LELAP Lab ID #04176)



05-APR-18



Project Manager: **Joel Lowry TRC Solutions, Inc** 2057 Commerce Midland, TX 79703

Reference: XENCO Report No(s): **580869** GJ Eddy Coop Unit #108 Project Address: Eddy Co., NM

## Joel Lowry:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 580869. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 580869 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Huns hoah

Kelsey Brooks Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994. Certified and approved by numerous States and Agencies. A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America



## Sample Id

Sample Iu
SE-1A @ 18'
SE-1B@10'
SE-1B @ 20'
SE-1C @3'
SE-1C @12'
SE-1C @20'
SE-2A @18'
SE-2B @ 10'
SE-2B @20'
SE-2C@3'
SE-2C@6'
SE-2C@12'
SE-2C@20'
SE-2D@3'
SE-2D@9'
SE-2D @12'
SE-2D@ 20'
SE-2E@3'
SE-2E@6'
NE-1A @18'
NE1B@10'
NE-1B @20'
NE-1C @3'
NE-1C@12'
NE-1C @20'
N-1A@18'
N-1B @10'
N-1B@20'
N-1C@3'
NW-1A @18'
NW-1B@10'
NW-1B@20'
NW-1C @ 3'
NW-1C @ 6'
NW-1C @ 9'
NW-1C @ 20'
NW-1D @ 3'
NW-1D @ 6'
NW-1D @ 9'

SW-1A@18' SW-1B@10' SW-1B@20'

# Sample Cross Reference 580869



## TRC Solutions, Inc, Midland, TX

GJ Eddy Coop Unit #108

М	atrix	Date Collected	Sample Depth	Lab Sample Id
	S	03-22-18 09:00	18 ft	580869-001
	S	03-22-18 09:05	10 ft	580869-002
	S	03-22-18 09:10	20 ft	580869-003
	S	03-22-18 09:15	3 ft	580869-004
	S	03-22-18 09:20	12 ft	580869-005
	S	03-22-18 09:25	20 ft	580869-006
	S	03-22-18 09:30	18 ft	580869-007
	S	03-22-18 09:35	10 ft	580869-008
	S	03-22-18 09:40	20 ft	580869-009
	S	03-22-18 09:45	3 ft	580869-010
	S	03-22-18 09:50	6 ft	580869-011
	S	03-22-18 09:55	12 ft	580869-012
	S	03-22-18 10:00	20 ft	580869-013
	S	03-22-18 10:05	3 ft	580869-014
	S	03-22-18 10:10	9 ft	580869-015
	S	03-22-18 10:15	12 ft	580869-016
	S	03-22-18 10:20	20 ft	580869-017
	S	03-22-18 10:25	3 ft	580869-018
	S	03-22-18 10:30	6 ft	580869-019
	S	03-22-18 10:35	18 ft	580869-020
	S	03-22-18 10:40	10 ft	580869-021
	S	03-22-18 10:45	20 ft	580869-022
	S	03-22-18 10:50	3 ft	580869-023
	S	03-22-18 10:55	12 ft	580869-024
	S	03-22-18 11:00	20 ft	580869-025
	S	03-22-18 11:05	18 ft	580869-026
	S	03-22-18 11:10	10 ft	580869-027
	S	03-22-18 11:15	20 ft	580869-028
	S	03-22-18 11:20	3 ft	580869-029
	S	03-23-18 11:25	18 ft	580869-030
	S	03-23-18 11:30	10 ft	580869-031
	S	03-23-18 11:35	20 ft	580869-032
	S	03-23-18 11:40	3 ft	580869-033
	S	03-23-18 11:45	6 ft	580869-034
	S	03-23-18 11:50	9 ft	580869-035
	S	03-23-18 11:55	20 ft	580869-036
	S	03-23-18 12:00	3 ft	580869-037
	S	03-23-18 12:05	6 ft	580869-038
	S	03-23-18 12:10	9 ft	580869-039
	S	03-23-18 12:15	20 ft	580869-040
	S	03-23-18 12:20	18 ft	580869-041
	S	03-23-18 12:25	10 ft	580869-042
	S	03-23-18 12:30	20 ft	580869-043



# Sample Cross Reference 580869



## TRC Solutions, Inc, Midland, TX

GJ Eddy Coop Unit #108

S	03-23-18 12:35	3 ft	580869-044
S	03-23-18 12:40	12 ft	580869-045
S	03-23-18 12:45	20 ft	580869-046
S	03-23-18 12:50	18 ft	580869-047
S	03-23-18 12:55	10 ft	580869-048
S	03-23-18 13:00	20 ft	580869-049
S	03-23-18 13:05	3 ft	580869-050
S	03-23-18 13:10	12 ft	580869-051
S	03-23-18 13:15	20 ft	580869-052
S	03-23-18 13:20	3 ft	580869-053
S	03-23-18 13:25	12 ft	580869-054
S	03-23-18 13:30	20 ft	580869-055



## CASE NARRATIVE

Client Name: TRC Solutions, Inc Project Name: GJ Eddy Coop Unit #108

Project ID: Work Order Number(s): 580869 
 Report Date:
 05-APR-18

 Date Received:
 03/29/2018

### Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments: Batch: LBA-3045469 BTEX by EPA 8021B Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3045487 BTEX by EPA 8021B Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



Project Id: Contact:

Contact:Joel LowryProject Location:Eddy Co., NM

Certificate of Analysis Summary 580869

TRC Solutions, Inc, Midland, TX Project Name: GJ Eddy Coop Unit #108



Date Received in Lab:Thu Mar-29-18 04:14 pmReport Date:05-APR-18Project Manager:Kelsey Brooks

	Lab Id:	580869-0	001	580869-0	002	580869-0	03	580869-0	04	580869-0	005	580869-0	06
Analysis Requested	Field Id:	SE-1A @	18'	SE-1B@	10'	SE-1B @	20'	SE-1C @	3'	SE-1C @	12'	SE-1C @	20'
Analysis Requested	Depth:	18- ft		10- ft		20- ft		3- ft		12- ft		20- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Mar-22-18	09:00	Mar-22-18	09:05	Mar-22-18 09:10		Mar-22-18 (	09:15	Mar-22-18	09:20	Mar-22-18 (	09:25
BTEX by EPA 8021B	Extracted:	Mar-30-18	16:45	Mar-30-18 16:45		Mar-30-18	16:45				1		
	Analyzed:	Mar-30-18	22:24	Mar-30-18	22:43	Mar-30-18 2	23:02						
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL						
Benzene		< 0.00202	0.00202	< 0.00199	0.00199	< 0.00200	0.00200						
Toluene		< 0.00202			0.00199	< 0.00200	0.00200						
Ethylbenzene		< 0.00202			0.00199	< 0.00200	0.00200						
m,p-Xylenes		< 0.00403	<0.00403 0.00403		0.00398	< 0.00399	0.00399						
o-Xylene		< 0.00202	0.00202	< 0.00199	0.00199	< 0.00200	0.00200						
Total Xylenes		< 0.00202	0.00202	< 0.00199	0.00199	< 0.002	0.002						
Total BTEX		< 0.00202	0.00202	< 0.00199	0.00199	< 0.002	0.002						
Chloride by EPA 300	Extracted:	Apr-02-18	09:00	Apr-02-18 (	09:00	Apr-02-18 (	)9:00	Apr-02-18 (	Apr-02-18 09:00 Apr-02-18 09:00		09:00	Apr-02-18 09:00	
	Analyzed:	Apr-02-18	10:58	Apr-02-18	11:03	Apr-02-18 1	11:08	Apr-02-18 1	02-18 11:13 Apr-02-18 11:19		11:19	Apr-02-18 11	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		791	5.00	2940	25.0	96.5	5.00	255	4.99	73.5	4.99	65.7	4.97
TPH by SW8015 Mod	Extracted:	Mar-31-18	14:00	Mar-31-18	14:00	Mar-31-18	14:00						
	Analyzed:	Apr-01-18	19:40	Apr-01-18	20:59	Apr-01-18 2	21:25						
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL						
Gasoline Range Hydrocarbons (GRO)		<15.0	00		15.0	<15.0	15.0						
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0						
Oil Range Hydrocarbons (ORO)		<15.0	<15.0 15.0		15.0	<15.0	15.0						
Total TPH		<15	15	<15	15	<15	15						

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Huns Boah

Kelsey Brooks Project Manager



Project Id: Contact:

Contact:Joel LowryProject Location:Eddy Co., NM

Certificate of Analysis Summary 580869

TRC Solutions, Inc, Midland, TX Project Name: GJ Eddy Coop Unit #108



Date Received in Lab:Thu Mar-29-18 04:14 pmReport Date:05-APR-18Project Manager:Kelsey Brooks

	Lab Id:		007	580869-0	008	580869-0	009	580869-0	010	580869-011		580869-012	
	Field Id:	SE-2A @	18'	SE-2B @	10'	SE-2B @	20'	SE-2C@	3'	SE-2C@	6'	SE-2C@	12'
Analysis Requested	Depth:	18- ft		10- ft		20- ft		3- ft		6- ft		12- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Mar-22-18	09:30	Mar-22-18	09:35	Mar-22-18	09:40	Mar-22-18	09:45	Mar-22-18 (	09:50	Mar-22-18	09:55
BTEX by EPA 8021B	Extracted:	Mar-30-18	16:45	Mar-30-18	Mar-30-18 16:45		16:45						
	Analyzed:	Mar-30-18	23:21	Mar-30-18	23:40	Mar-30-182	23:59						
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL						
Benzene		< 0.00200	0.00200	< 0.00201	0.00201	< 0.00202	0.00202						
Toluene		< 0.00200			0.00201	< 0.00202	0.00202						
Ethylbenzene		< 0.00200	<0.00200 0.00200		0.00201	< 0.00202	0.00202						
m,p-Xylenes		< 0.00401	<0.00401 0.00401		0.00402	< 0.00404	0.00404						
o-Xylene		< 0.00200	0.00200	< 0.00201	0.00201	< 0.00202	0.00202						
Total Xylenes		< 0.002	0.002	< 0.00201	0.00201	< 0.00202	0.00202						
Total BTEX		< 0.002	0.002	< 0.00201	0.00201	< 0.00202	0.00202						
Chloride by EPA 300	Extracted:	Apr-02-18	09:00	Apr-02-18	09:00	Apr-02-18 (	09:00	Apr-02-18 (	09:00	Apr-02-18 (	09:00	Apr-02-18 (	09:00
	Analyzed:	Apr-02-18	11:40	Apr-02-18	11:45	Apr-02-18	12:08	Apr-02-18	12:13	Apr-02-18 1	2:18	Apr-02-18 12:	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		409	5.00	491	5.00	48.7	4.99	4570	49.7	96.8	4.99	267	4.98
TPH by SW8015 Mod	Extracted:	Mar-31-18	14:00	Mar-31-18	14:00	Mar-31-18	14:00						
	Analyzed:	Apr-01-18	21:52	Apr-01-18	22:19	Apr-01-18 2	22:47						
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL						
Gasoline Range Hydrocarbons (GRO)		<15.0			15.0	<14.9	14.9						
Diesel Range Organics (DRO)		<15.0	<15.0 15.0		15.0	<14.9	14.9						
Oil Range Hydrocarbons (ORO)		<15.0	<15.0 15.0		15.0	<14.9	14.9						
Total TPH		<15	15	<15	15	<14.9	14.9						

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Huns Boah

Kelsey Brooks Project Manager



Project Id:

Contact:Joel LowryProject Location:Eddy Co., NM

Certificate of Analysis Summary 580869

TRC Solutions, Inc, Midland, TX Project Name: GJ Eddy Coop Unit #108



Date Received in Lab:Thu Mar-29-18 04:14 pmReport Date:05-APR-18Project Manager:Kelsey Brooks

	Lab Id:	580869-0	13	580869-0	14	580869-0	15	580869-0	16	580869-0	017	580869-0	18
Analysis Requested	Field Id:	SE-2C@	20'	SE-2D@	3'	SE-2D@	9'	SE-2D @	12'	SE-2D@	20'	SE-2E@	3'
Anulysis Kequesieu	Depth:	20- ft		3- ft		9- ft		12- ft		20- ft		3- ft	
	Matrix:	SOIL	SOIL			SOIL		SOIL		SOIL		SOIL	
	Sampled:	Mar-22-18	Mar-22-18 10:00		0:05	Mar-22-18 1	0:10	Mar-22-18 10:15		Mar-22-18	10:20	Mar-22-18 1	10:25
Chloride by EPA 300	Extracted:	Apr-02-18	09:00	Apr-02-18 09:00		Apr-02-18 09:00 Apr-02-18 12:00		2:00	Apr-02-18	12:00	Apr-02-18 1	2:00	
	Analyzed:	Apr-02-18	Apr-02-18 12:29		2:34	Apr-02-18 1	2:40	Apr-02-18 1	3:11	Apr-02-18	13:59	Apr-02-18 1	4:04
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		423	4.98	20600	248	8210	49.7	443	5.00	374	4.95	687	4.99

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Huns Boah

Kelsey Brooks Project Manager



Project Id: Contact:

Contact:Joel LowryProject Location:Eddy Co., NM

Certificate of Analysis Summary 580869

TRC Solutions, Inc, Midland, TX Project Name: GJ Eddy Coop Unit #108



Date Received in Lab:Thu Mar-29-18 04:14 pmReport Date:05-APR-18Project Manager:Kelsey Brooks

	Lab Id:		10	580869-0	20	580869-0	021	580869-	122	580869-0	123	580869-0	24
	Field Id:	580869-0 SE-2E@	-	NE-1A @	-	NE1B@		NE-1B @	-	NE-1C @		NE-1C@	
Analysis Requested			0		18				-		<i>v</i> 3		12
	Depth:	6- ft		18- ft		10- ft		20- ft		3- ft		12- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Mar-22-18	10:30	Mar-22-18	10:35	Mar-22-18	10:40	Mar-22-18	10:45	Mar-22-18	10:50	Mar-22-18	10:55
BTEX by EPA 8021B	Extracted:			Mar-30-18 1	16:45	Mar-30-18	16:45	Mar-30-18	16:45				
	Analyzed:			Mar-31-18 (	00:18	Mar-31-18	00:37	Mar-31-18	00:56				
	Units/RL:			mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene				< 0.00199	0.00199	< 0.00200	0.00200	< 0.00201	0.00201				
Toluene				< 0.00199	0.00199	< 0.00200	0.00200	< 0.00201	0.00201				
Ethylbenzene					0.00199	< 0.00200	0.00200	< 0.00201	0.00201				
m,p-Xylenes					0.00398	< 0.00399	0.00399	< 0.00402	0.00402				
o-Xylene					0.00199	< 0.00200	0.00200	< 0.00201	0.00201				
Total Xylenes				< 0.00199	0.00199	< 0.002	0.002	< 0.00201	0.00201				
Total BTEX				< 0.00199	0.00199	< 0.002	0.002	< 0.00201	0.00201				
Chloride by EPA 300	Extracted:	Apr-02-18	12:00	Apr-02-18 1	2:00	Apr-02-18	16:45	Apr-02-18 16:45		Apr-02-18	16:45	Apr-02-18 1	6:45
	Analyzed:	Apr-02-18	14:10	Apr-02-18 1	4:15	Apr-03-18	02:22	Apr-03-18	02:38	Apr-03-18 (	02:43	Apr-03-18 (	02:49
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		135	4.90	723	4.96	302	5.00	77.1	4.99	139	4.97	84.0	4.97
TPH by SW8015 Mod	Extracted:			Mar-31-18 1	14:00	Mar-31-18	14:00	Mar-31-18	14:00				
	Analyzed:			Apr-02-18 2	23:13	Apr-02-18	23:40	Apr-02-18	00:07				
	Units/RL:			mg/kg	RL	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)					15.0	<15.0	15.0	<14.9	14.9				
Diesel Range Organics (DRO)				<15.0	15.0	<15.0	15.0	<14.9	14.9				
Oil Range Hydrocarbons (ORO)					15.0	<15.0	15.0	<14.9	14.9				
Total TPH				<15	15	<15	15	<14.9	14.9				

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Kelsey Brooks Project Manager



Project Id: Contact:

Contact:Joel LowryProject Location:Eddy Co., NM

Certificate of Analysis Summary 580869

TRC Solutions, Inc, Midland, TX Project Name: GJ Eddy Coop Unit #108



Date Received in Lab:Thu Mar-29-18 04:14 pmReport Date:05-APR-18Project Manager:Kelsey Brooks

	Lab Id:	580869-0	25	580869-02	26	580869-0	)27	580869-0	028	580869-0	29	580869-	030
Are alugia Do are orted	Field Id:	NE-1C @	20'	N-1A@1	8'	N-1B @	10'	N-1B@2	20'	N-1C@	3'	NW-1A	@18'
Analysis Requested	Depth:	20- ft		18- ft		10- ft		20- ft		3- ft		18- f	t
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Mar-22-18	11:00	Mar-22-18 1	1:05	Mar-22-18	11:10	Mar-22-18	11:15	Mar-22-18	11:20	Mar-23-18	11:25
BTEX by EPA 8021B	Extracted:			Mar-30-18 1	6:45	Mar-30-18	16:45	Mar-30-18	16:45			Mar-30-18	16:45
	Analyzed:			Mar-31-18 0	01:15	Mar-31-18	09:10	Mar-31-18	09:29			Mar-31-18	09:48
	Units/RL:			mg/kg	RL	mg/kg	RL	mg/kg	RL			mg/kg	RL
Benzene				< 0.00202	0.00202	< 0.00199	0.00199	< 0.00200	0.00200			< 0.00201	0.00201
Toluene				< 0.00202	0.00202	< 0.00199	0.00199	< 0.00200	0.00200			< 0.00201	0.00201
Ethylbenzene				< 0.00202	0.00202	< 0.00199	0.00199	< 0.00200	0.00200			< 0.00201	0.00201
m,p-Xylenes				< 0.00403	0.00403	< 0.00398	0.00398	< 0.00399	0.00399			< 0.00402	0.00402
o-Xylene				< 0.00202	0.00202	< 0.00199	0.00199	< 0.00200	0.00200			< 0.00201	0.00201
Total Xylenes				< 0.00202	0.00202	< 0.00199	0.00199	< 0.002	0.002			<0.00201 0	
Total BTEX				< 0.00202	0.00202	< 0.00199	0.00199	< 0.002	0.002			< 0.00201	0.00201
Chloride by EPA 300	Extracted:	Apr-02-18	16:45	Apr-02-18 1	6:45	Apr-02-18	16:45	Apr-02-18	16:45	Apr-02-18	6:45	Apr-02-18	16:45
	Analyzed:	Apr-03-18 (	02:54	Apr-03-18 0	3:10	Apr-03-18 (	03:15	Apr-03-18	03:20	Apr-03-18 (	03:26	Apr-03-18	03:31
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		72.4	4.99	1260	25.0	593	5.00	866	4.95	583	5.00	769	24.9
TPH by SW8015 Mod	Extracted:			Mar-31-18 1	4:00	Mar-31-18	14:00	Mar-31-18	14:00			Mar-31-18	14:00
	Analyzed:			Apr-02-18 0	0:33	Apr-02-18	17:32	Apr-02-18	02:21			Apr-02-18	02:48
	Units/RL:			mg/kg	RL	mg/kg	RL	mg/kg	RL			mg/kg	RL
Oil Range Hydrocarbons (ORO)	L			<15.0	15.0	29.3	15.0	<15.0	15.0			<15.0	15.0
Total TPH				<15	15	245.3	15	<15	15			<15	15
TPH by SW8015 Mod	TPH by SW8015 Mod Extracted:			Mar-31-18 14:00		Mar-31-18	14:00					Mar-31-18	14:00
	Analyzed:			Apr-02-18 0	0:33	Apr-02-18	17:32					Apr-02-18	02:48
	Units/RL:			mg/kg	RL	mg/kg	RL					mg/kg	RL
Gasoline Range Hydrocarbons (GRO)				<15.0	15.0	<15.0	15.0					<15.0	15.0
Diesel Range Organics (DRO)				<15.0	15.0	216	15.0					<15.0	15.0

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Kelsey Brooks Project Manager

Page 10 of 42



Project Id: Contact: Joel Lowry

Project Location: Eddy Co., NM

Certificate of Analysis Summary 580869

TRC Solutions, Inc, Midland, TX Project Name: GJ Eddy Coop Unit #108



Date Received in Lab:Thu Mar-29-18 04:14 pmReport Date:05-APR-18Project Manager:Kelsey Brooks

Lab Id.		580869-0	031	580869-0	)32	580869-0	33	580869-0	34	580869-0	35	580869-0	36
	Field Id:	NW-1B@		NW-1B@		NW-1C @		NW-1C @	-	NW-1C @		NW-1C @	
Analysis Requested	Depth:	10- ft		20- ft		3- ft		6- ft		9- ft		20- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Mar-23-18	11:30	Mar-23-18	11:35	Mar-23-18 1	11:40	Mar-23-18	11:45	Mar-23-18	11:50	Mar-23-18	11:55
BTEX by EPA 8021B	Extracted:	Mar-30-18	16:45	Mar-30-18	16:45					1			
	Analyzed:	Mar-31-18	10:06	Mar-31-18	10:25								
	Units/RL:	mg/kg	RL	mg/kg	RL								
Benzene		< 0.00201	0.00201	< 0.00199	0.00199								
Toluene		< 0.00201	0.00201	< 0.00199	0.00199								
Ethylbenzene		< 0.00201			0.00199								
m,p-Xylenes		< 0.00402	<0.00402 0.00402		0.00398								
o-Xylene		< 0.00201	0.00201	< 0.00199	0.00199								
Total Xylenes		< 0.00201	0.00201	< 0.00199	0.00199								
Total BTEX		< 0.00201	0.00201	< 0.00199	0.00199								
Chloride by EPA 300	Extracted:	Apr-02-18	16:45	Apr-02-18	16:45	Apr-02-18 1	6:45	Apr-02-18	6:45	Apr-02-18 1	6:45	Apr-02-18 1	6:45
	Analyzed:	Apr-03-18	03:36	Apr-03-18 (	03:52	Apr-03-18 0	03:58	Apr-03-18 (	04:13	Apr-03-18 (	04:19	Apr-03-18 (	04:24
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		38.8	4.97	1300	24.9	259	5.00	414	4.98	1570	24.8	5700	49.5
TPH by SW8015 Mod	Extracted:	Mar-31-18	14:00	Mar-31-18	14:00								
	Analyzed:	Apr-02-18	03:14	Apr-02-18 (	03:42								
	Units/RL:	mg/kg	RL	mg/kg	RL								
Gasoline Range Hydrocarbons (GRO)	·	<15.0	15.0	<15.0	15.0								
Diesel Range Organics (DRO)		<15.0	<15.0 15.0		15.0								
Oil Range Hydrocarbons (ORO)		<15.0	<15.0 15.0		15.0								
Total TPH		<15			15								

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Kelsey Brooks Project Manager



Project Id: Contact: Joel Lowry

Project Location: Eddy Co., NM

Certificate of Analysis Summary 580869

TRC Solutions, Inc, Midland, TX Project Name: GJ Eddy Coop Unit #108



Date Received in Lab:Thu Mar-29-18 04:14 pmReport Date:05-APR-18Project Manager:Kelsey Brooks

					• •				1.0				
	Lab Id:	580869-0	)37	580869-0	38	580869-0	39	580869-0	40	580869-0	041	580869-	042
Analysis Requested	Field Id:	NW-1D @	@ 3'	NW-1D @	9 6'	NW-1D @	9'	NW-1D @	20'	SW-1A@	918'	SW-1B@	210'
marysis Requested	Depth:	3- ft		6- ft		9- ft		20- ft		18- ft		10- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	,	SOIL	,
	Sampled:	Mar-23-18	12:00	Mar-23-18	12:05	Mar-23-18	12:10	Mar-23-18	12:15	Mar-23-18	12:20	Mar-23-18	12:25
BTEX by EPA 8021B	Extracted:									Mar-30-18	16:45	Mar-30-18	16:45
	Analyzed:									Mar-31-18	10:44	Mar-31-18	11:03
	Units/RL:									mg/kg	RL	mg/kg	RL
Benzene	·									< 0.00200	0.00200	< 0.00200	0.00200
Toluene										< 0.00200	0.00200	< 0.00200	0.00200
Ethylbenzene										< 0.00200	0.00200	< 0.00200	0.00200
n,p-Xylenes										< 0.00399	0.00399	< 0.00401	0.00401
o-Xylene										< 0.00200	0.00200	< 0.00200	0.00200
Total Xylenes										< 0.002	0.002	< 0.002	0.002
Total BTEX										< 0.002	0.002	< 0.002	0.002
Chloride by EPA 300	Extracted:	Apr-02-18	16:45	Apr-02-18 16:45		Apr-02-18 16:45		Apr-02-18 16:45		Mar-30-18 12:00		Mar-30-18 12:0	
	Analyzed:	Apr-03-18	04:29	Apr-03-18 (	04:35	Apr-03-18 (	04:40	Apr-03-18 04:45		Mar-30-18	13:32	Mar-30-18 14:	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		29.5	4.99	704	4.95	1090	4.98	2280	24.6	62.1	5.00	76.4	4.96
TPH by SW8015 Mod	Extracted:									Mar-31-18	14:00	Mar-31-18	14:00
	Analyzed:									Apr-02-18	04:08	Apr-02-18	04:36
	Units/RL:									mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)										<14.9	14.9	<15.0	15.0
Diesel Range Organics (DRO)										<14.9	14.9	<15.0	15.0
Oil Range Hydrocarbons (ORO)										<14.9	14.9	<15.0	15.0
Total TPH										<14.9	14.9	<15	15

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Kelsey Brooks Project Manager



Project Id: Contact:

Contact:Joel LowryProject Location:Eddy Co., NM

Certificate of Analysis Summary 580869

TRC Solutions, Inc, Midland, TX Project Name: GJ Eddy Coop Unit #108



Date Received in Lab:Thu Mar-29-18 04:14 pmReport Date:05-APR-18Project Manager:Kelsey Brooks

	Lab Id:	580869-0	)43	580869-0	44	580869-0	45	580869-0	46	580869-0	)47	580869-0	)48
	Field Id:	SW-1B @		SW-1C@		SW-1C @	-	SW-1C@	-	S-1A@1		S-1B@1	-
Analysis Requested	Depth:	20- ft		3- ft		12- ft		20- ft		18- ft		10- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Mar-23-18	12:30	Mar-23-18 1	2:35	Mar-23-18	12:40	Mar-23-18	12:45	Mar-23-18	12:50	Mar-23-18	12:55
BTEX by EPA 8021B	Extracted:	Mar-30-18	16:45							Mar-30-18	16:45	Mar-30-18	16:45
	Analyzed:	Mar-31-18	11:22							Mar-31-18	11:42	Mar-31-18	12:01
	Units/RL:	mg/kg	RL							mg/kg	RL	mg/kg	RL
Benzene	-	< 0.00201	0.00201							< 0.00199	0.00199	< 0.00200	0.00200
Toluene		< 0.00201	0.00201							< 0.00199	0.00199	< 0.00200	0.00200
Ethylbenzene		< 0.00201	0.00201							< 0.00199	0.00199	< 0.00200	0.00200
p-Xylenes		< 0.00402	0.00402							< 0.00398	0.00398	< 0.00401	0.00401
o-Xylene		< 0.00201	0.00201							< 0.00199	0.00199	< 0.00200	0.00200
Total Xylenes		< 0.00201	0.00201							< 0.00199	0.00199	< 0.002	0.002
Total BTEX		< 0.00201	0.00201							< 0.00199	0.00199	< 0.002	0.002
Chloride by EPA 300	Extracted:	Mar-30-18	12:00	Mar-30-18 1	2:00	Mar-30-18	12:00	Mar-30-18	2:00	Mar-30-18	<0.00199 0.00199 Mar-30-18 12:00		12:00
	Analyzed:	Mar-30-18	14:36	Mar-30-18 1	4:41	Mar-30-18	14:47	Mar-30-18	4:52	Mar-30-18	15:08	Mar-30-18	15:13
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		29.6	5.00	257	5.00	50.9	4.95	25.8	4.90	7660	49.7	18500	250
TPH by SW8015 Mod	Extracted:	Mar-31-18	14:00							Mar-31-18	14:00	Mar-31-18	14:00
	Analyzed:	Apr-02-18	05:02							Apr-02-18	05:29	Apr-02-18	05:57
	Units/RL:	mg/kg	RL							mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0							<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		<15.0	<15.0 15.0							<15.0	15.0	<15.0	15.0
Oil Range Hydrocarbons (ORO)		<15.0	15.0							<15.0	15.0	<15.0	15.0
Total TPH		<15	15							<15	15	<15	15

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Kelsey Brooks Project Manager



Project Id: Contact:

Contact:Joel LowryProject Location:Eddy Co., NM

Certificate of Analysis Summary 580869

TRC Solutions, Inc, Midland, TX Project Name: GJ Eddy Coop Unit #108



Date Received in Lab:Thu Mar-29-18 04:14 pmReport Date:05-APR-18Project Manager:Kelsey Brooks

	Lab Id:	580869-0	)49	580869-0	50	580869-0	051	580869-0	52	580869-0	)53	580869-0	54
	Field Id:	S-1B@		S-1C@3		S-1C@1	-	S-1C@2		S-2@3		S-2@12	
Analysis Requested	Depth:	20- ft		3- ft		12- ft		20- ft		3- ft		12- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Mar-23-18	13:00	Mar-23-18	13:05	Mar-23-18	13:10	Mar-23-18	13:15	Mar-23-18	13:20	Mar-23-18	13:25
BTEX by EPA 8021B	Extracted:	Apr-02-18	09:00										
	Analyzed:	Apr-02-18	16:18										
	Units/RL:	mg/kg	RL										
Benzene		< 0.00201	0.00201										
Toluene		< 0.00201	0.00201										
Ethylbenzene		< 0.00201	0.00201										
m,p-Xylenes		< 0.00402	0.00402										
o-Xylene		< 0.00201	0.00201										
Total Xylenes		< 0.00201	0.00201										
Total BTEX		< 0.00201	0.00201										
Chloride by EPA 300	Extracted:	Mar-30-18	12:00	Mar-30-18 1	12:00	Mar-30-18	12:00	Mar-30-18 1	12:00	Mar-30-18	12:00	Mar-30-18	12:00
	Analyzed:	Mar-30-18	15:29	Mar-30-18 1	15:34	Mar-30-18	15:40	Mar-30-18 1	15:45	Mar-30-18	15:50	Mar-30-18	15:56
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		4300	49.0	421	4.90	26.7	4.91	< 5.00	5.00	169	4.90	14.9	5.00
TPH by SW8015 Mod	Extracted:	Apr-01-18	10:00										
	Analyzed:	Apr-02-18	08:09										
	Units/RL:	mg/kg	RL										
Gasoline Range Hydrocarbons (GRO)	*	<15.0	15.0										
Diesel Range Organics (DRO)		<15.0	15.0										
Oil Range Hydrocarbons (ORO)		<15.0	15.0										
Total TPH		<15	15										

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Kelsey Brooks Project Manager



Project Id:

Contact:Joel LowryProject Location:Eddy Co., NM

Certificate of Analysis Summary 580869

TRC Solutions, Inc, Midland, TX Project Name: GJ Eddy Coop Unit #108



Date Received in Lab:Thu Mar-29-18 04:14 pmReport Date:05-APR-18Project Manager:Kelsey Brooks

	Lab Id:	580869-055			
Analysis Requested	Field Id:	S-2@20'			
Anuiysis Kequesieu	Depth:	20- ft			
	Matrix:	SOIL			
	Sampled:	Mar-23-18 13:30			
Chloride by EPA 300	Extracted:	Mar-30-18 12:00			
	Analyzed:	Mar-30-18 16:01			
	Units/RL:	mg/kg RL			
Chloride		<4.92 4.92			

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Huns Boah

Kelsey Brooks Project Manager



## **Flagging Criteria**



- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- **E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- **F** RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- **H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- **K** Sample analyzed outside of recommended hold time.
- **JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- \*\* Surrogate recovered outside laboratory control limit.
- **BRL** Below Reporting Limit.
- RL Reporting Limit
- MDL Method Detection LimitSDLSample Detection LimitLOD Limit of Detection
- PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation
- DL Method Detection Limit
- NC Non-Calculable

SMP Clie	ent Sample	BLK	Method Blank	
BKS/LCS	Blank Spike/Laboratory Control Sample	BKSD/LCSD	Blank Spike Duplicate/Labor	ratory Control Sample Duplicate
MD/SD	Method Duplicate/Sample Duplicate	MS	Matrix Spike	MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

\* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



### Project Name: GJ Eddy Coop Unit #108

	Sample: 580869-001 / SMP	Batc				
mg/kg	Date Analyzed: 03/30/18 22:24	SU	RROGATE R	ECOVERY S	STUDY	
BTEX	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
obenzene		0.0290	0.0300	97	70-130	
		0.0256	0.0300	85	70-130	
<b>#:</b> 3045487	Sample: 580869-002 / SMP	Bate	h: 1 Matrix	: Soil		
mg/kg	Date Analyzed: 03/30/18 22:43	SU	RROGATE R	ECOVERY	STUDY	
		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
	Analytes	0.0207	0.0200		70.120	
				-		
	Sample: 580869-003 / SMP				70-150	
	-			-		
mg/kg	Date Analyzeu: 05/50/18 25.02	SU	RROGATE R	ECOVERY	STUDY	
BTEX	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
obenzene		0.0293	0.0300	98	70-130	
orobenzene		0.0282	0.0300	94	70-130	
#: 3045487	Sample: 580869-007 / SMP	Batc	h: 1 Matrix	: Soil	11	
mg/kg	Date Analyzed: 03/30/18 23:21	SU	RROGATE R	ECOVERY	STUDY	
BTEX		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
honzono	Analytes	0.0205	0.0200		70.120	
	Sample: 520260 002 / SMD				/0-130	
	-					
iiig/ĸg	Date Analyzeu: 05/50/16/25.40	st	KROGATE R	ECOVERY S	STUDY	
	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
			1			
obenzene		0.0310	0.0300	103	70-130	
	<pre>#: 3045487 mg/kg BTEX bbenzene orobenzene #: 3045487 mg/kg BTEX bbenzene orobenzene #: 3045487 mg/kg BTEX bbenzene orobenzene #: 3045487 mg/kg BTEX bbenzene </pre>	mg/kg       Date Analyzed: 03/30/18 22:24         BTEX by EPA 8021B         Analytes         orobenzene         irit 3045487         Sample: 580869-002 / SMP         mg/kg       Date Analyzed: 03/30/18 22:43         BTEX by EPA 8021B         Analytes         mg/kg       Date Analyzed: 03/30/18 22:43         BTEX by EPA 8021B         Analytes         orobenzene         irit 3045487         Sample: 580869-003 / SMP         mg/kg       Date Analyzed: 03/30/18 23:02         BTEX by EPA 8021B         mg/kg       Date Analyzed: 03/30/18 23:02         BTEX by EPA 8021B         orobenzene       Imalytes         orobenzene       Imalytes         mg/kg       Date Analyzed: 03/30/18 23:02         BTEX by EPA 8021B       Imalytes         orobenzene       Imalytes         orobenzene       Imalytes         orobenzene       Imalytes         iff 3045487       Sample: 580869-007 / SMP         mg/kg       Date Analyzed: 03/30/18 23:21         BTEX by EPA 8021B       Imalytes         imalytes       Imalytes         obenzene       Imalytes         imalytes <td>#: 3045487 Sample: 580869-001 / SMP Batc mg/kg Date Analyzed: 03/30/18 22:24 SU BTEX by EPA 8021B Amount Found [A]          Analytes       Amount Found [A]         abenzene       0.0290         orobenzene       0.0290         orobenzene       0.0290         orobenzene       0.0290         mg/kg       Date Analyzed: 03/30/18 22:43       Batc         mg/kg       Date Analyzed: 03/30/18 22:43       SU         BTEX by EPA 8021B       Amount Found [A]       Amount Found [A]         whenzene       0.0307       0.0302         whenzene       0.0307       0.0302         whenzene       0.0307       0.0302         whenzene       0.0302       SU         benzene       0.0302       SU         mg/kg       Date Analyzed: 03/30/18 23:02       SU         BTEX by EPA 8021B       Amount Found [A]       Found [A]         whenzene       0.0293       0.0293         orobenzene       0.0293       0.0282         #: 3045487       Sample: 580869-007 / SMP       Batc         mg/kg       Date Analyzed: 03/30/18 23:21       SU         BTEX by EPA 8021B       Amount Found [A]       Found [A]         whenzene       0.0295       0.0266         #: 3045487</td> <td>#: 3045487       Sample: 580869-001 / SMP       Batch: 1       Matrix         mg/kg       Date Analyzed: 03/30/18 22:24       SURROGATE R         BTEX by EPA 8021B       Amount [A]       True Amount [B]         Analytes       0.0290       0.0300         obenzene       0.0256       0.0300         grading       Date Analyzed: 03/30/18 22:43       SURROGATE R         BTEX by EPA 8021B       Amount [B]       True Amount [B]         BTEX by EPA 8021B       Amount [A]       True Amount [B]         Analytes       0.0307       0.0300         obenzene       0.0307       0.0300         grading       Date Analyzed: 03/30/18 23:02       SURROGATE R         BTEX by EPA 8021B       Amount [B]       True Amount [B]         analytes       0.0307       0.0300         orobenzene       0.0307       0.0300         grading       Date Analyzed: 03/30/18 23:02       SURROGATE R         BTEX by EPA 8021B       Amount [A]       True Amount [B]         analytes       0.0282       0.0300         orobenzene       0.0282       0.0300         orobenzene       0.0282       0.0300         grading       Date Analyzed: 03/30/18 23:21       SURROGATE R</td> <td>#: 3045487       Sample: 580869-001 / SMP       Batch:       1       Matrix: Soil         mg/kg       Date Analyzed:       03/30/18 22:24       SURROGATE RECOVERY SURROGATE RECOV</td> <td>#: 3045487         Sample: 580869-001 / SMP         Batch:         1         Matrix: Soil           mg/kg         Date Analyzed:         03/30/18 22:24         SURROGATE RECOVERY STUDY           BTEX by EPA 8021B         Amount Found         True (A)         Manount (B)         Recovery Soft         Control Limits 's/R           betrazene         0.0290         0.0300         97         70-130           orobenzene         0.0290         0.0300         97         70-130           mg/kg         Date Analyzed:         03/30/18 22:43         SURROGATE RECOVERY STUDY           BTEX by EPA 8021B         Amount Found (A)         True Amount [B]         Recovery Soft         Control Limits '%R           benzene         0.0307         0.0300         102         70-130           orobenzene         0.0307         0.0300         102         70-130           orobenzene         0.0307         0.0300         102         70-130           orobenzene         0.0307         0.0300         102         70-130           benzene         0.0307         0.0300         102         70-130           mg/kg         Date Analyzed:         03/30/18 23:02         SURROGATE RECOVERY STUDY           BTEX by EPA 8021B         Amount Found [A]</td>	#: 3045487 Sample: 580869-001 / SMP Batc mg/kg Date Analyzed: 03/30/18 22:24 SU BTEX by EPA 8021B Amount Found [A]          Analytes       Amount Found [A]         abenzene       0.0290         orobenzene       0.0290         orobenzene       0.0290         orobenzene       0.0290         mg/kg       Date Analyzed: 03/30/18 22:43       Batc         mg/kg       Date Analyzed: 03/30/18 22:43       SU         BTEX by EPA 8021B       Amount Found [A]       Amount Found [A]         whenzene       0.0307       0.0302         whenzene       0.0307       0.0302         whenzene       0.0307       0.0302         whenzene       0.0302       SU         benzene       0.0302       SU         mg/kg       Date Analyzed: 03/30/18 23:02       SU         BTEX by EPA 8021B       Amount Found [A]       Found [A]         whenzene       0.0293       0.0293         orobenzene       0.0293       0.0282         #: 3045487       Sample: 580869-007 / SMP       Batc         mg/kg       Date Analyzed: 03/30/18 23:21       SU         BTEX by EPA 8021B       Amount Found [A]       Found [A]         whenzene       0.0295       0.0266         #: 3045487	#: 3045487       Sample: 580869-001 / SMP       Batch: 1       Matrix         mg/kg       Date Analyzed: 03/30/18 22:24       SURROGATE R         BTEX by EPA 8021B       Amount [A]       True Amount [B]         Analytes       0.0290       0.0300         obenzene       0.0256       0.0300         grading       Date Analyzed: 03/30/18 22:43       SURROGATE R         BTEX by EPA 8021B       Amount [B]       True Amount [B]         BTEX by EPA 8021B       Amount [A]       True Amount [B]         Analytes       0.0307       0.0300         obenzene       0.0307       0.0300         grading       Date Analyzed: 03/30/18 23:02       SURROGATE R         BTEX by EPA 8021B       Amount [B]       True Amount [B]         analytes       0.0307       0.0300         orobenzene       0.0307       0.0300         grading       Date Analyzed: 03/30/18 23:02       SURROGATE R         BTEX by EPA 8021B       Amount [A]       True Amount [B]         analytes       0.0282       0.0300         orobenzene       0.0282       0.0300         orobenzene       0.0282       0.0300         grading       Date Analyzed: 03/30/18 23:21       SURROGATE R	#: 3045487       Sample: 580869-001 / SMP       Batch:       1       Matrix: Soil         mg/kg       Date Analyzed:       03/30/18 22:24       SURROGATE RECOVERY SURROGATE RECOV	#: 3045487         Sample: 580869-001 / SMP         Batch:         1         Matrix: Soil           mg/kg         Date Analyzed:         03/30/18 22:24         SURROGATE RECOVERY STUDY           BTEX by EPA 8021B         Amount Found         True (A)         Manount (B)         Recovery Soft         Control Limits 's/R           betrazene         0.0290         0.0300         97         70-130           orobenzene         0.0290         0.0300         97         70-130           mg/kg         Date Analyzed:         03/30/18 22:43         SURROGATE RECOVERY STUDY           BTEX by EPA 8021B         Amount Found (A)         True Amount [B]         Recovery Soft         Control Limits '%R           benzene         0.0307         0.0300         102         70-130           orobenzene         0.0307         0.0300         102         70-130           orobenzene         0.0307         0.0300         102         70-130           orobenzene         0.0307         0.0300         102         70-130           benzene         0.0307         0.0300         102         70-130           mg/kg         Date Analyzed:         03/30/18 23:02         SURROGATE RECOVERY STUDY           BTEX by EPA 8021B         Amount Found [A]

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



### Project Name: GJ Eddy Coop Unit #108

	rders : 580869 #: 3045487	9, Sample: 580869-009 / SMP	Bate	Project ID h: 1 Matrix			
Units:	mg/kg	Date Analyzed: 03/30/18 23:59	SU	RROGATE R	ECOVERY	STUDY	
		X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluor	obenzene		0.0283	0.0300	94	70-130	
4-Bromoflu	iorobenzene		0.0260	0.0300	87	70-130	
Lab Batch	#: 3045487	Sample: 580869-020 / SMP	Bate	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 03/31/18 00:18	SU	RROGATE R	ECOVERY S	STUDY	
		A polytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
140.0		Analytes	0.0005	0.0200		50.100	
1,4-Difluor			0.0287	0.0300	96	70-130	
	iorobenzene	G 1 500070 001 / 0MD	0.0268	0.0300	89	70-130	
	#: 3045487	Sample: 580869-021 / SMP	Batc				
Units:	mg/kg	Date Analyzed: 03/31/18 00:37	SU	RROGATE R	ECOVERY	STUDY	
	BTEX	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes	[1*]	[2]	[D]	/011	
1,4-Difluor	obenzene		0.0308	0.0300	103	70-130	
4-Bromoflu	iorobenzene		0.0287	0.0300	96	70-130	
Lab Batch	#: 3045487	Sample: 580869-022 / SMP	Batc	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 03/31/18 00:56	SU	RROGATE R	ECOVERY	STUDY	
		X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor			0.0286	0.0300	95	70-130	
· ·	iorobenzene		0.0262	0.0300	87	70-130	
	#: 3045487	Sample: 580869-026 / SMP	Batc			/0150	
Units:	mg/kg	Date Analyzed: 03/31/18 01:15		RROGATE R		STUDY	
		X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flage
		Analytes			[D]		
1,4-Difluor			0.0266	0.0300	89	70-130	
4-Bromoflu	orobenzene		0.0264	0.0300	88	70-130	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



### Project Name: GJ Eddy Coop Unit #108

	<b>:ders :</b> 580869 #: 3045487	<b>Sample:</b> 580869-027 / SMP	Batcl	Project ID h: 1 Matrix			
Units:	mg/kg	Date Analyzed: 03/31/18 09:10	SU	RROGATE R	ECOVERY S	STUDY	
	BTEX	by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluor	obenzene		0.0307	0.0300	102	70-130	
4-Bromoflu	orobenzene		0.0282	0.0300	94	70-130	
Lab Batch	#: 3045487	Sample: 580869-028 / SMP	Batcl	h: 1 Matrix	: Soil	·	
Units:	mg/kg	Date Analyzed: 03/31/18 09:29	SU	RROGATE R	ECOVERY S	STUDY	
		L by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor		Analytes	0.0275	0.0300	92	70-130	
4-Bromoflu				1	86		
	#: 3045487	Sample: 580869-030 / SMP	0.0257 Batcl	0.0300 h: 1 Matrix		70-130	
Lab Daten Units:		1			-		
Units:	mg/kg	Date Analyzed: 03/31/18 09:48	SU	RROGATE R	ECOVERY	STUDY	
	BTEX	L by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluor	obenzene		0.0295	0.0300	98	70-130	
4-Bromoflu	orobenzene		0.0272	0.0300	91	70-130	
Lab Batch	#: 3045487	Sample: 580869-031 / SMP	Batc	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 03/31/18 10:06	SU	RROGATE R	ECOVERY S	STUDY	
		L by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor			0.0268	0.0300	89	70-130	
4-Bromoflu	orobenzene		0.0357	0.0300	119	70-130	
Lab Batch	#: 3045487	Sample: 580869-032 / SMP	Batc				l
Units:	mg/kg	Date Analyzed: 03/31/18 10:25	SU	RROGATE R	ECOVERY S	STUDY	
		by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluor			0.0286	0.0300	95	70-130	
4-Bromoflu	orobenzene		0.0285	0.0300	95	70-130	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



### Project Name: GJ Eddy Coop Unit #108

	<b>ders :</b> 580869 #: 3045487	<b>Sample:</b> 580869-041 / SMP	Batch	Project ID 1: 1 Matrix			
Units:	mg/kg	<b>Date Analyzed:</b> 03/31/18 10:44	SU	RROGATE R	ECOVERY S	STUDY	
	BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flag
		Analytes			[D]		
1,4-Difluoro	obenzene		0.0283	0.0300	94	70-130	
4-Bromoflu	orobenzene		0.0272	0.0300	91	70-130	
Lab Batch	<b>#:</b> 3045487	Sample: 580869-042 / SMP	Batch	n: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 03/31/18 11:03	SU	RROGATE R	ECOVERY S	STUDY	
		X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flage
1,4-Difluor		Anaryus	0.0292	0.0300	97	70-130	
4-Bromoflu			0.0280	0.0300	93	70-130	
Lab Batch	#: 3045487	Sample: 580869-043 / SMP	Batch				
Units:	mg/kg	Date Analyzed: 03/31/18 11:22	SU	RROGATE R	ECOVERY S	STUDY	
	BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flag
		Analytes			[D]		
1,4-Difluoro	obenzene		0.0278	0.0300	93	70-130	
4-Bromoflu	orobenzene		0.0258	0.0300	86	70-130	
Lab Batch	#: 3045487	Sample: 580869-047 / SMP	Batch	n: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 03/31/18 11:42	SU	RROGATE R	ECOVERY S	STUDY	
		X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
140.0		Analytes	0.0000	0.0200		50.100	
1,4-Difluoro 4-Bromoflu			0.0282	0.0300	94	70-130	
	#: 3045487	Sample: 580869-048 / SMP	0.0261 Batch	0.0300 n: 1 Matrix	87	70-130	
Lab Datch Units:	mg/kg	Date Analyzed: 03/31/18 12:01					
omo.	ш <sub>б</sub> , к <u>в</u>	Datt Analyzeu. 05/51/16 12.01	SU.	RROGATE R	LCOVERYS	STUDY	
		X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flag
		Analytes			[D]		
1,4-Difluor			0.0278	0.0300	93	70-130	
4-Bromoflu	orobenzene		0.0275	0.0300	92	70-130	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



### Project Name: GJ Eddy Coop Unit #108

Lab Batch #:	3045441	Sample: 580869-001 / SMP	Batc	Project ID h: 1 Matrix			
Units:	mg/kg	Date Analyzed: 04/01/18 19:40	SU	RROGATE R	ECOVERY S	STUDY	
	TPH	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chlorooctane	e		101	99.9	101	70-135	
o-Terphenyl			51.1	50.0	102	70-135	
Lab Batch #:	3045441	Sample: 580869-002 / SMP	Batc	h: 1 Matrix	: Soil	·	
Units:	mg/kg	Date Analyzed: 04/01/18 20:59	SU	RROGATE R	ECOVERY S	STUDY	
		by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1 Chlans a starr		Analytes	107	00.0		70.125	
1-Chlorooctane	9		107	99.8	107	70-135	
o-Terphenyl	2045441	Same 1 - 590960 002 / SMD	53.7 <b>D</b> =4.1	49.9	108	70-135	
Lab Batch #:		Sample: 580869-003 / SMP	Batc				
Units:	mg/kg	Date Analyzed: 04/01/18 21:25	SU	RROGATE R	ECOVERY S	STUDY	
	TPH I	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chlorooctane	e		100	99.9	100	70-135	
o-Terphenyl			50.8	50.0	102	70-135	
Lab Batch #:	3045441	Sample: 580869-007 / SMP	Batc	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 04/01/18 21:52	SU	RROGATE R	ECOVERY S	STUDY	
	TPH I	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flage
		Analytes			[D]		
1-Chlorooctane	e		96.7	99.7	97	70-135	
o-Terphenyl			49.6	49.9	99	70-135	
Lab Batch #:	3045441	Sample: 580869-008 / SMP	Batc	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 04/01/18 22:19	SU	RROGATE R	ECOVERY S	STUDY	
		oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flage
ſ		Analytes			[D]		
1-Chlorooctane	e		114	99.7	114	70-135	
o-Terphenyl			57.7	49.9	116	70-135	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



### Project Name: GJ Eddy Coop Unit #108

Lab Batch #:		Sample: 580869-009 / SMP	Batc	h: 1 Matrix	<b>::</b> Soil		
Units:	mg/kg	Date Analyzed: 04/01/18 22:47	SU	RROGATE R	ECOVERY S	STUDY	
	TPH b	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flage
		Analytes			[D]		
1-Chlorooctane	e		98.3	99.6	99	70-135	
o-Terphenyl			49.2	49.8	99	70-135	
Lab Batch #:	3045441	Sample: 580869-022 / SMP	Bate	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 04/02/18 00:07	SU	RROGATE R	ECOVERY S	STUDY	
		by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		Analytes	00.2	00.6		70.125	
	•		99.3	99.6	100	70-135	
o-Terphenyl Lab Batch #:	2045441	Sample: 580869-026 / SMP	50.8 Batc	49.8 h: 1 Matrix	102	70-135	
		-					
Units:	mg/kg	Date Analyzed: 04/02/18 00:33	SU	RROGATE R	ECOVERY S	STUDY	
	TPH b	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chlorooctane	e		96.0	99.9	96	70-135	
o-Terphenyl			48.4	50.0	97	70-135	
Lab Batch #:	3045441	Sample: 580869-028 / SMP	Bate	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 04/02/18 02:21	SU	RROGATE R	ECOVERY S	STUDY	
		by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.011		Analytes				70.107	
1-Chlorooctane	2		94.7	99.8	95	70-135	
o-Terphenyl	2045441	Sample: 590970.020 / SMD	50.9	49.9	102	70-135	
Lab Batch #:		Sample: 580869-030 / SMP	Batc				
Units:	mg/kg	Date Analyzed: 04/02/18 02:48	SU	RROGATE R	ECOVERY S	STUDY	
		by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chlorooctane	e		89.9	99.7	90	70-135	
o-Terphenyl			48.6	49.9	97	70-135	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



### Project Name: GJ Eddy Coop Unit #108

Lab Batch #:		Sample: 580869-031 / SMP	Batc				
Units:	mg/kg	Date Analyzed: 04/02/18 03:14	SU	RROGATE R	ECOVERY S	STUDY	
	TPH I	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chlorooctane	e		94.2	99.7	94	70-135	
o-Terphenyl			45.6	49.9	91	70-135	
Lab Batch #:	3045441	Sample: 580869-032 / SMP	Batc	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 04/02/18 03:42	SU	RROGATE R	ECOVERY S	STUDY	
	TPH I	oy SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		Analytes	97.8	100	98	70-135	
o-Terphenyl	, 		50.0	50.0	100	70-135	
Lab Batch #:	3045441	Sample: 580869-041 / SMP	Batc			/0-135	
Units:	mg/kg	Date Analyzed: 04/02/18 04:08					
Omts.	mg/ Kg	Date Analyzeu. 04/02/10 04.00	SL	RROGATE R	ECOVERYS	STUDY	
	TPH I	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chlorooctane	e		99.2	99.6	100	70-135	
o-Terphenyl			50.5	49.8	101	70-135	
Lab Batch #:	3045441	Sample: 580869-042 / SMP	Batc	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 04/02/18 04:36	SU	RROGATE R	ECOVERY	STUDY	
	TPH I	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		Analytes	102	00.0		70.125	
o-Terphenyl			102 51.9	99.9 50.0	102	70-135 70-135	
Lab Batch #:	3045441	Sample: 580869-043 / SMP	Batc			10-155	
Units:	mg/kg	Date Analyzed: 04/02/18 05:02		RROGATE R		STUDY	
	TPH	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flage
		Analytes			[D]		
1-Chlorooctane	e		99.5	99.8	100	70-135	
o-Terphenyl			50.9	49.9	102	70-135	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



### Project Name: GJ Eddy Coop Unit #108

Work Ord Lab Batch #:	<b>ers :</b> 58086 3045441	9, Sample: 580869-047 / SMP	Batc	Project ID					
Units:	mg/kg	Date Analyzed: 04/02/18 05:29	SU	RROGATE F	RECOVERY	STUDY			
	TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes			[D]				
1-Chlorooctan	e		96.7	99.8	97	70-135			
o-Terphenyl			49.2	49.9	99	70-135			
Lab Batch #:	3045441	Sample: 580869-048 / SMP	Batc	h: 1 Matrix	<b>k:</b> Soil				
Units:	mg/kg	Date Analyzed: 04/02/18 05:57	SU	RROGATE F	RECOVERYS	STUDY			
	TPH	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctan	0	Anarytes	95.9	99.9	96	70-135			
o-Terphenyl	c		48.6	50.0	96	70-135			
Lab Batch #:	3045471	Sample: 580869-049 / SMP	48.0 Batc			70-135			
Lab Batch #. Units:		•							
Units:	mg/kg	Date Analyzed: 04/02/18 08:09	SU	RROGATE F	RECOVERY	STUDY			
	TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes			[D]				
1-Chlorooctan	e		103	99.9	103	70-135			
o-Terphenyl			52.6	50.0	105	70-135			
Lab Batch #:	3045469	Sample: 580869-049 / SMP	Batc	h: 1 Matrix	<b>k:</b> Soil				
Units:	mg/kg	Date Analyzed: 04/02/18 16:18	SURROGATE RECOVERY STUDY						
	втех	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
4.4.510 1		Analytes							
1,4-Difluorobe			0.0278	0.0300	93	70-130			
4-Bromofluor		Complex 520260 007 / CD CD	0.0343	0.0300	114	70-130			
Lab Batch #:		Sample: 580869-027 / SMP	Batc						
Units:	mg/kg	Date Analyzed: 04/02/18 17:32	SU	RROGATE F	RECOVERYS	STUDY			
	TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes			[D]				
1-Chlorooctan	e		103	99.9	103	70-135			
o-Terphenyl			52.1	50.0	104	70-135			

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



### Project Name: GJ Eddy Coop Unit #108

	rders : 580869 #: 3045441	9, Sample: 580869-020 / SMP	Batel	Project ID h: 1 Matrix			
Units:	mg/kg	Date Analyzed: 04/02/18 23:13	SU	RROGATE R	ECOVERY S	STUDY	
	TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chlorooct	ane		97.1	99.8	97	70-135	
o-Terpheny			49.4	49.9	99	70-135	
Lab Batch	<b>#:</b> 3045441	Sample: 580869-021 / SMP	Batel	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 04/02/18 23:40	SU	RROGATE R	ECOVERY S	STUDY	
		by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooct		Analytes	98.0	99.8	98	70-135	
o-Terpheny			49.8	49.9	98	70-135	
	#: 3045487	Sample: 7641899-1-BLK / 1			: Solid	70-155	
Lab Batch Units:	mg/kg	Date Analyzed: 03/30/18 22:04					
Units.	iiig/ Kg	Date Analyzeu. 05/50/18 22.04	SU	RROGATE R	ECOVERY	STUDY	
	BTEX	<b>X by EPA 8021B</b>	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluor	obenzene		0.0275	0.0300	92	70-130	
4-Bromoflu	orobenzene		0.0216	0.0300	72	70-130	
Lab Batch	#: 3045441	Sample: 7641861-1-BLK / ]	BLK Batc	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 04/01/18 18:18	SU	RROGATE R	ECOVERY S	STUDY	
		by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooct			98.5	100	99	70-135	
o-Terpheny			50.0	50.0	100	70-135	
	#: 3045471	Sample: 7641866-1-BLK / ]			: Solid		
Units:	mg/kg	<b>Date Analyzed:</b> 04/02/18 06:49		RROGATE R		STUDY	
		by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chlorooct	ane		100	100	100	70-135	
o-Terpheny	1		51.5	50.0	103	70-135	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



### Project Name: GJ Eddy Coop Unit #108

Lab Batch	#: 3045469	Sample: 7641883-1-BLK / ]	BLK Bate	ch: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 04/02/18 14:43	SU	URROGATE R	ECOVERY S	STUDY	
	BTEX	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flage
		Analytes			[D]		
1,4-Difluoro	benzene		0.0280	0.0300	93	70-130	
4-Bromofluc	orobenzene		0.0352	0.0300	117	70-130	
Lab Batch	#: 3045487	Sample: 7641899-1-BKS / 1	BKS Bate	ch: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 03/30/18 20:09	SU	JRROGATE R	ECOVERY S	STUDY	
		X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluoro		1111119 005	0.0297	0.0300	99	70-130	
4-Bromofluc	orobenzene		0.0252	0.0300	84	70-130	
Lab Batch	#: 3045441	Sample: 7641861-1-BKS / 1	BKS Bate	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 04/01/18 18:44	SU	JRROGATE R	ECOVERY S	STUDY	
	TPH b	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flage
		Analytes			[D]		
1-Chloroocta	ane		109	100	109	70-135	
o-Terphenyl			52.6	50.0	105	70-135	
Lab Batch	#: 3045471	Sample: 7641866-1-BKS / 1	BKS Bate	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 04/02/18 07:15	SU	URROGATE R	ECOVERY S	STUDY	
		oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flage
		Analytes			[D]		
1-Chloroocta			108	100	108	70-135	
o-Terphenyl			53.3	50.0	107	70-135	
	#: 3045469	Sample: 7641883-1-BKS / 1					
Units:	mg/kg	Date Analyzed: 04/02/18 11:06	SU	JRROGATE R	ECOVERY S	STUDY	
		K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flag
		Analytes			[D]		
1,4-Difluoro			0.0289	0.0300	96	70-130	
4-Bromofluo	orobenzene		0.0332	0.0300	111	70-130	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



### Project Name: GJ Eddy Coop Unit #108

	<b>ders : 5</b> 8086 #: 3045487	9, Sample: 7641899-1-BSD / 1	BSD Batch:	Project ID 1 Matrix	: x: Solid		
Units:	mg/kg	Date Analyzed: 03/30/18 20:29	SUR	ROGATE R	RECOVERY	STUDY	
	втех	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluor	obenzene		0.0299	0.0300	100	70-130	
4-Bromoflu			0.0286	0.0300	95	70-130	
Lab Batch	<b>#:</b> 3045441	Sample: 7641861-1-BSD / 1	BSD Batch:	1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 04/01/18 19:12	SUF	RROGATE R	RECOVERY	STUDY	
	TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1 (11)		Analytes		100		50.105	
1-Chlorooct			118	100	118	70-135	
o-Terpheny			58.0	50.0	116	70-135	
	#: 3045471	Sample: 7641866-1-BSD / 1			<b>c:</b> Solid		
Units:	mg/kg	Date Analyzed: 04/02/18 07:43	SUR	ROGATE R	RECOVERY	STUDY	
	TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chlorooct	ane		106	100	106	70-135	
o-Terpheny	1		52.2	50.0	104	70-135	
Lab Batch	#: 3045469	Sample: 7641883-1-BSD / 1	BSD Batch:	1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 04/02/18 13:07	SUR	ROGATE R	RECOVERY	STUDY	
	BTEX	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	benzene		0.0278	0.0300	93	70-130	
4-Bromoflu			0.0314	0.0300	105	70-130	
	#: 3045487	Sample: 580869-001 S / MS					
Units:	mg/kg	<b>Date Analyzed:</b> 03/30/18 20:48		ROGATE R	RECOVERY	STUDY	
	втех	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluor	obenzene		0.0285	0.0300	95	70-130	
4-Bromoflu	orobenzene		0.0280	0.0300	93	70-130	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



### Project Name: GJ Eddy Coop Unit #108

	r <b>ders :</b> 58086 #: 3045441	9, Sample: 580869-001 S / MS	Bate	Project ID h: 1 Matrix			
Units:	mg/kg	Date Analyzed: 04/01/18 20:06	SU	RROGATE R	ECOVERY	STUDY	
	TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chlorooc	tane		112	100	112	70-135	
o-Terpheny	rl		55.2	50.0	110	70-135	
Lab Batch	#: 3045471	Sample: 580869-049 S / MS	B Batc	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 04/02/18 08:35	SU	RROGATE R	ECOVERY	STUDY	
	TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1 (11		Analytes				50.105	
1-Chlorooc			111	99.9	111	70-135	
o-Terpheny		g	53.1	50.0	106	70-135	
	#: 3045469	Sample: 580997-001 S / MS					
Units:	mg/kg	Date Analyzed: 04/02/18 13:26	SU	RROGATE R	ECOVERY	STUDY	
	BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes	[A]	[10]	[D]	701	
1,4-Difluor	obenzene		0.0275	0.0300	92	70-130	
4-Bromoflu	orobenzene		0.0324	0.0300	108	70-130	
Lab Batch	#: 3045487	Sample: 580869-001 SD / M	ASD Bate	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 03/30/18 21:07	SU	RROGATE R	ECOVERY	STUDY	
	BTEX	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	obenzene		0.0307	0.0300	102	70-130	
4-Bromoflu	iorobenzene		0.0282	0.0300	94	70-130	
Lab Batch	#: 3045441	Sample: 580869-001 SD / M					
Units:	mg/kg	Date Analyzed: 04/01/18 20:32	SU	RROGATE R	ECOVERY	STUDY	
	TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chlorooc			118	100	118	70-135	
o-Terpheny	1		55.1	50.0	110	70-135	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



### Project Name: GJ Eddy Coop Unit #108

	r <b>ders :</b> 58086 #: 3045471	9, Sample: 580869-049 SD / N	ASD Batcl	Project ID: h: 1 Matrix:			
Units:	mg/kg	<b>Date Analyzed:</b> 04/02/18 09:00	SU	RROGATE RI	ECOVERY S	STUDY	
	TPH	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooc	tane	Analytes	110	99.7	110	70-135	
o-Terpheny	1		52.8	49.9	106	70-135	
Lab Batch	#: 3045469	Sample: 580997-001 SD / M	ASD Bate	h: 1 Matrix:	Soil	11	
Units:	mg/kg	Date Analyzed: 04/02/18 13:45	SU	RROGATE RI	ECOVERY	STUDY	
	BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	obenzene	Anarytes	0.0277	0.0300	92	70-130	
	orobenzene		0.0277	0.0300	92	70-130	
	ior obelizene		0.0555	0.0500	111	/0-150	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



### **BS / BSD Recoveries**



### Project Name: GJ Eddy Coop Unit #108

Work Order #: 580869							Proj	ject ID:			
Analyst: ALJ	D	ate Prepar	red: 04/02/202	18			Date A	nalyzed: (	04/02/2018		
Lab Batch ID: 3045469 Sample: 7641883-1-	BKS	Batcl	<b>h #:</b> 1					Matrix: S	Solid		
Units: mg/kg		BLAN	K/BLANK	SPIKE / I	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	ŊŶ	
BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00199	0.0996	0.123	123	0.100	0.119	119	3	70-130	35	
Toluene	<0.00199	0.0996	0.116	116	0.100	0.113	113	3	70-130	35	
Ethylbenzene	<0.00199	0.0996	0.111	111	0.100	0.108	108	3	70-130	35	
m,p-Xylenes	<0.00398	0.199	0.229	115	0.200	0.224	112	2	70-130	35	
o-Xylene	<0.00199	0.0996	0.113	113	0.100	0.111	111	2	70-130	35	
Analyst: ALJ	D	ate Prepar	red: 03/30/202	18			Date A	nalyzed: (	03/30/2018		
Lab Batch ID: 3045487 Sample: 7641899-1-	BKS	Batcl	<b>h #:</b> 1					Matrix:	Solid		
Units: mg/kg		BLAN	K/BLANK	SPIKE / I	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	DY	
BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00200	0.0998	0.101	101	0.100	0.0862	86	16	70-130	35	
Toluene	<0.00200	0.0998	0.0962	96	0.100	0.0847	85	13	70-130	35	
Ethylbenzene	< 0.00200	0.0998	0.0927	93	0.100	0.0862	86	7	70-130	35	
m,p-Xylenes	<0.00399	0.200	0.189	95	0.200	0.175	88	8	70-130	35	
o-Xylene	< 0.00200	0.0998	0.0958	96	0.100	0.0919	92	4	70-130	35	

Relative Percent Difference RPD =  $200^{*}|(C-F)/(C+F)|$ Blank Spike Recovery [D] =  $100^{*}(C)/[B]$ Blank Spike Duplicate Recovery [G] =  $100^{*}(F)/[E]$ All results are based on MDL and Validated for QC Purposes



### **BS / BSD Recoveries**



### Project Name: GJ Eddy Coop Unit #108

Work Order	: #: 580869							Proj	ject ID:			
Analyst:	OJS	D	ate Prepar	ed: 03/30/20	18			Date A	nalyzed:	03/30/2018		
Lab Batch ID	<b>:</b> 3045400 <b>Sample:</b> 7641808-1	-BKS	Batcl	<b>n #:</b> 1					Matrix:	Solid		
Units:	mg/kg		BLAN	K /BLANK	SPIKE / ]	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	DY	
Analy	Chloride by EPA 300 ytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride		<5.00	250	242	97	250	239	96	1	90-110	20	
Analyst:	OJS	D	ate Prepar	ed: 04/02/20	18			Date A	nalyzed:	04/02/2018		
Lab Batch ID	<b>:</b> 3045512 <b>Sample:</b> 7641818-1	-BKS	Batcl	<b>n #:</b> 1					Matrix:	Solid		
Units:	mg/kg		BLAN	K /BLANK	SPIKE / ]	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	DY	
Analy	Chloride by EPA 300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride		<5.00	250	249	100	250	251	100	1	90-110	20	1
Analyst:	OJS	D	ate Prepar	ed: 04/02/20	18	1	1	Date A	nalyzed:	04/02/2018	+	4
Lab Batch ID	<b>:</b> 3045514 <b>Sample:</b> 7641873-1	-BKS	Batcl	<b>n #:</b> 1					Matrix:	Solid		
Units:	mg/kg		BLAN	K /BLANK	SPIKE / 1	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	DY	
Analy	Chloride by EPA 300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
- I mary												

Relative Percent Difference RPD =  $200^{*}|(C-F)/(C+F)|$ Blank Spike Recovery [D] =  $100^{*}(C)/[B]$ Blank Spike Duplicate Recovery [G] =  $100^{*}(F)/[E]$ All results are based on MDL and Validated for QC Purposes



### **BS / BSD Recoveries**



### Project Name: GJ Eddy Coop Unit #108

Work Order	#: 580869							Proj	ject ID:			
Analyst:	OJS	D	ate Prepa	red: 04/02/201	8			Date A	nalyzed: (	04/03/2018		
Lab Batch ID	<b>:</b> 3045518 <b>Sample:</b> 7641894-1	-BKS	Batc	<b>h #:</b> 1					Matrix: S	Solid		
Units:	mg/kg		BLAN	NK /BLANK S	SPIKE / ]	BLANK S	SPIKE DUP	LICATE	RECOVI	ERY STUI	DY	
Analy	Chloride by EPA 300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride		<5.00	250	265	106	250	253	101	5	90-110	20	
Analyst:	ARM	D	ate Prepa	red: 03/31/201	8	-	1	Date A	nalyzed: (	04/01/2018	1	
Lab Batch ID	<b>:</b> 3045441 <b>Sample:</b> 7641861-1	-BKS	Bate	<b>:h #:</b> 1					Matrix: S	Solid		
Units:	mg/kg		BLAN	NK /BLANK S	SPIKE / ]	BLANK S	SPIKE DUP	LICATE	RECOVI	ERY STUI	DY	
	TPH by SW8015 Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analy	rtes		[B]	[C]	[D]	[E]	Result [F]	[G]				
Gasoline F	Range Hydrocarbons (GRO)	<15.0	1000	1040	104	1000	1040	104	0	70-135	20	
Diesel Rat	nge Organics (DRO)	<15.0	1000	1070	107	1000	1070	107	0	70-135	20	
Analyst:	ARM	D	ate Prepa	red: 04/01/201	8			Date A	nalyzed: (	04/02/2018		
Lab Batch ID	<b>:</b> 3045471 <b>Sample:</b> 7641866-1	-BKS	Bate	<b>h #:</b> 1					Matrix: S	Solid		
Units:	mg/kg		BLAN	NK /BLANK S	SPIKE / ]	BLANK S	SPIKE DUP	LICATE	RECOVI	ERY STUI	DY	
Analy	TPH by SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	Range Hydrocarbons (GRO)	<15.0	1000	1040	104	1000	1020	102	2	70-135	20	
Diesel Rat	nge Organics (DRO)	<15.0	1000	1080	108	1000	1050	105	3	70-135	20	

Relative Percent Difference RPD =  $200^{*}|(C-F)/(C+F)|$ Blank Spike Recovery [D] =  $100^{*}(C)/[B]$ Blank Spike Duplicate Recovery [G] =  $100^{*}(F)/[E]$ All results are based on MDL and Validated for QC Purposes



### Project Name: GJ Eddy Coop Unit #108



<b>Work Order # :</b> 580869						Project II	<b>)</b> :				
Lab Batch ID: 3045469	QC- Sample ID:	580997	-001 S	Ba	tch #:	1 Matrix	k: Soil				
<b>Date Analyzed:</b> 04/02/2018	Date Prepared:	04/02/2	018	An	alyst: A	ALJ					
Reporting Units: mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00200	0.0998	0.0865	87	0.100	0.0956	96	10	70-130	35	
Toluene	<0.00200	0.0998	0.0735	74	0.100	0.0930	84	10	70-130	35	
Ethylbenzene	<0.00200	0.0998	0.0622	62	0.100	0.0714	71	14	70-130	35	X
m,p-Xylenes	<0.00399	0.200	0.136	68	0.200	0.160	80	16	70-130	35	X
o-Xylene	<0.00200	0.0998	0.0708	71	0.100	0.0830	83	16	70-130	35	
Lab Batch ID: 3045487	QC- Sample ID:	580869	-001 S	Ba	tch #:	1 Matrix	<b>k:</b> Soil	1	1	1	
<b>Date Analyzed:</b> 03/30/2018	Date Prepared:	03/30/2	018	An	alyst: A	ALJ					
Reporting Units: mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00202	0.101	0.0847	84	0.100	0.0769	77	10	70-130	35	
Toluene	<0.00202	0.101	0.0840	83	0.100	0.0759	76	10	70-130	35	
Ethylbenzene	<0.00202	0.101	0.0849	84	0.100	0.0766	77	10	70-130	35	
m,p-Xylenes	<0.00403	0.202	0.172	85	0.201	0.156	78	10	70-130	35	
o-Xylene	< 0.00202	0.101	0.0889	88	0.100	0.0796	80	11	70-130	35	

Matrix Spike Percent Recovery  $[D] = 100^{*}(C-A)/B$ Relative Percent Difference RPD =  $200^{*}|(C-F)/(C+F)|$  Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E



### Project Name: GJ Eddy Coop Unit #108



Work Order # :	580869						Project II	):				
Lab Batch ID:	3045400	QC- Sample ID:	580869	-041 S	Ba	tch #:	1 Matrix	k: Soil				
Date Analyzed:	03/30/2018	Date Prepared:	03/30/2	018	An	alyst: (	DJS					
<b>Reporting Units:</b>	mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
	Chloride by EPA 300	Parent Sample Result	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Chloride		62.1	250	310	99	250	311	100	0	90-110	20	
Lab Batch ID:	3045400	C- Sample ID:	580869	-046 S	Ba	tch #:	1 Matrix	<b>k:</b> Soil				
Date Analyzed:	03/30/2018	Date Prepared:	03/30/2	018	An	alyst: (	OJS					
<b>Reporting Units:</b>	mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
	Chloride by EPA 300	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Chloride		25.8	245	283	105	245	277	103	2	90-110	20	
Lab Batch ID:	3045512	C- Sample ID:	580869	-006 S	Ba	tch #:	1 Matrix	<b>k:</b> Soil				
Date Analyzed:	04/02/2018	Date Prepared:	04/02/2	018	An	alyst: (	DJS					
<b>Reporting Units:</b>	mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
	Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added	Spiked Sample Result [C]	Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	Анауиз	65.7	[ <b>B</b> ] 249	302	[ <b>D</b> ] 95	[E] 249	308	[ <b>G</b> ] 97	2	90-110	20	

Matrix Spike Percent Recovery  $[D] = 100^{*}(C-A)/B$ Relative Percent Difference RPD =  $200^{*}|(C-F)/(C+F)|$  Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E



### Project Name: GJ Eddy Coop Unit #108



Work Order # :	580869						Project ID	):				
Lab Batch ID:	3045512	QC- Sample ID:	580948	-001 S	Ba	tch #:	1 Matrix	: Soil				
Date Analyzed:	04/02/2018	Date Prepared:	04/02/2	018	Ar	alyst: (	OJS					
<b>Reporting Units:</b>	mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
	Chloride by EPA 300	Parent Sample Result	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits %R	Control Limits %RPD	Flag
	Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%0K	%KPD	
Chloride		<4.95	248	249	100	248	247	100	1	90-110	20	
Lab Batch ID:	3045514	QC- Sample ID:	580869	-016 S	Ba	tch #:	1 Matrix	: Soil				
Date Analyzed:	04/02/2018	Date Prepared:	04/02/2	018	Ar	alyst: (	OJS					
<b>Reporting Units:</b>	mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
	Chloride by EPA 300	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Chloride		443	250	670	91	250	673	92	0	90-110	20	
Lab Batch ID:	3045514	C- Sample ID:	580892	-002 S	Ba	tch #:	1 Matrix	: Soil				
Date Analyzed:	04/02/2018	Date Prepared:	04/02/2	018	Ar	alyst: (	OJS					
<b>Reporting Units:</b>	mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
	Chloride by EPA 300	Parent Sample Result	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Chloride		7.09	250	264	103	250	250	97	5	90-110	20	

Matrix Spike Percent Recovery  $[D] = 100^{\circ}(C-A)/B$ Relative Percent Difference RPD =  $200^{\circ}|(C-F)/(C+F)|$  Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E



### Project Name: GJ Eddy Coop Unit #108



<b>Work Order # :</b> 580869						Project II	):				
<b>Lab Batch ID:</b> 3045518	QC- Sample ID:	580869	-021 S	Ba	tch #:	1 Matrix	: Soil				
<b>Date Analyzed:</b> 04/03/2018	Date Prepared:	04/02/2	018	An	alyst: (	OJS					
<b>Reporting Units:</b> mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Chloride by EPA 300	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]		[D]	[E]	Kesun [F]	[G]	/0	701	70KI D	
Chloride	302	250	542	96	250	565	105	4	90-110	20	
Lab Batch ID: 3045518	QC- Sample ID:	580869	-031 S	Ba	tch #:	1 Matrix	: Soil				
<b>Date Analyzed:</b> 04/03/2018	Date Prepared:	04/02/2	018	An	alyst: (	OJS					
<b>Reporting Units:</b> mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Chloride by EPA 300	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]	[0]	[D]	[E]	Kesut [F]	[G]	70	/01	/0KID	
Chloride	38.8	249	310	109	249	304	107	2	90-110	20	
Lab Batch ID: 3045441	QC- Sample ID:	580869	-001 S	Ba	tch #:	1 Matrix	: Soil				
<b>Date Analyzed:</b> 04/01/2018	Date Prepared:	03/31/2	018	An	alyst: A	ARM					
<b>Reporting Units:</b> mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
TPH by SW8015 Mod	Parent Sample Result	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1030	103	1000	1060	106	3	70-135	20	
Diesel Range Organics (DRO)	<15.0	1000	1080	108	1000	1100	110	2	70-135	20	

Matrix Spike Percent Recovery  $[D] = 100^{*}(C-A)/B$ Relative Percent Difference RPD =  $200^{*}|(C-F)/(C+F)|$  Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E



### Project Name: GJ Eddy Coop Unit #108



Work Order # :	580869						Project II	):				
Lab Batch ID:	3045471	QC- Sample ID:	580869	-049 S	Ba	tch #:	1 Matrix	: Soil				
Date Analyzed:	04/02/2018	Date Prepared:	04/01/2	018	An	alyst: A	ARM					
<b>Reporting Units:</b>	mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA'	TE REC	OVERYS	STUDY		
]	FPH by SW8015 Mod	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	-	RPD	Control Limits	Control Limits	Flag
	Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Gasoline Range	Hydrocarbons (GRO)	<15.0	999	1010	101	997	1030	103	2	70-135	20	
Diesel Range Or	ganics (DRO)	<15.0	999	1060	106	997	1070	107	1	70-135	20	

Matrix Spike Percent Recovery [D] = 100\*(C-A)/BRelative Percent Difference RPD = 200\*|(C-F)/(C+F)| Matrix Spike Duplicate Percent Recovery  $[G] = 100^{*}(F-A)/E$ 

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Stafford, Texas (281-240-4200)

# CHAIN OF CUSTODY

Page 1 Of 4

San Antonio, Texas (210-509-3334)

Phoenix, Arizona (480-355-0900)

Company Name / Branch: TRC Environmental Corporation Company Address: Notice: Notice: Signature of this document and relinquistment of samples constitutes a valid purchase order from client company to Xanco. Its affiliates and subcontractors. It assigns standard terms and conditions of service. Xanco will be liable only for the cost of samples and shall not assume any responsibility for any losses or experiments incurred by the Client if such bases are due to circumstances beyond the control of Xanco. A minimum charge of \$75 will be applied to each project. Xanco I stability will be limited to the cost of samples, how samples received by Xanco but not analyzed will be involced at \$5 per sample. These terms will be entroced unless are functionally accurated contract. Email: 2057 Commerce Drive No. Project Contact: Midland, TX 79703 14 3 12 -10 9 N Joel Lowry amplers's Name: Zach Conder 15 3 Day EMERGENCY Dallas Texas (214-902-0300) Relinquished by Sampler 2 Day EMERGENCY Next Day EMERGENCY Same Day TAT Relinquished by: Relinquished by: SE-2C @ 3' SE-1C @ 20' SE-1B @ 20' SE-1B @ 10' SE-1A @ 18' SE-2D @ 9' SE-2D @ 3 SE-2C @ 20' SE-2C @ 12' SE-2C @ 6' SE-2B @ 20' SE-2B @ 10' SE-2A @ 18' SE-1C @ 12' SE-1C @ 3' TAT Starts Day received by Lab, if received by 5:00 pm **Client / Reporting Information** ilowry@trcsolutions.com zconder@trcsolutions.com Turnaround Time (Business days) Field ID / Point of Collection 3 < 5 ٢ ٢ X Contract TAT 7 Day TAT 5 Day TAT Phone No: 432-466-4450 SAMPLE CUSTOPY MUST BE DOCUMENTED Date Time: Date Time: Sample Depth 20 20' 12 20' 20 12 10 18 18 9 ω 6 ω ω 5 Project Name/Number: GJ West Coop Unit #108 Project Location: COG Operating C/O Becky Haskell Eddy Co, NM Midland, Texas (432-704-5251) Invoice: 3/22/2018 3/22/2018 3/22/2018 3/22/2018 3/22/2018 3/22/2018 3/22/2018 3/22/2018 3/22/2018 3/22/2018 3/22/2018 3/22/2018 3/22/2018 3/22/2018 3/22/2018 voice To: Collection Date Received By: Requised By: Require a change possession, including courier delivery TRRP Checklist Received By: Received By Level 3 (CLP Forms) Level III Std QC+ Forms 10:05 9:55 9:45 9:35 9:20 9:15 9:10 9:05 9:00 10:10 10:00 9:50 9:40 9:30 9:25 Time Project Information Level II Std QC Matrix S S S S S S M S S S S S S S S S www.xenco.com Data Deliverable Information # of bottles \_ -----4 -4 \_ --4 --ろう нсі NaOH/Zr Acetate HNO3 TRRP Level IV Relinguished By: Custody Seal # UST / RG -411 Level IV (Full Data Pkg /raw data) H2SO4 NaOH NaHSO4 MEOH NONE × × × × × × TPH 8015 M Ext Preserved where applicable × × Chloride E 300 × × × × × × × × × × × × × Date Time: × × × BTEX 8021B × × × Analytical Information Hold FED-EX / UPS: Tracking # dneel2@concho.com lowry@trcsolutions.com blackburn@trcsolutions.com haskell@concho.com 6 Notes: Received By: Xenco Job # Received By: CF:(0-6: -0.2°C) Temp: J. W Corrected Temp: 2.L On Ice (6-23: +0.2°C) 2 5 20200 Cooler Temp. zconder@trcsolutions.com Field Comments WI = Wipe O = Oil WW= Waste Water W = Water S = Soil/Sed/Solid GW =Ground Water A = Air SL = Sludge OW =Ocean/Sea Water SW = Surface water P = Product DW = Drinking Water Thermo. Corr. Factor Matrix Codes IR ID:R-8 0 P

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Stafford, Texas (281-240-4200)

# CHAIN OF CUSTODY

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San Antonio, Texas (210-509-3334)

Phoenix, Arizona (480-355-0900)

				,					_					Yanco	Xenco Job #	1	2	2	1	
				WWW.	www.xenco.com	B										15	ğ	b	20	
Client / Reporting Information			Proie	oiect Information						_	Þ	nalytica	Analytical Information			-			Mat	Matrix Codes
Company Name / Branch:		Project Name/N	umber:																W = V	W = Water
Company Address: 2057 Commerce Drive		Project Location: Eddy Co, NM																		GW =Ground Water DW = Drinking Water
Email: Phone No: jowny@trcsolutions.com 432-466-4450 zconder@trcsolutions.com		Invoice To: COG Operating C/O Becky Haskell	C/O Becky Ha	askell															SL=	SW = Surface water SL = Sludge OW =Ocean/Sea Water
Project Contact: Joel Lowry		Invoice:								xt									N =	WI = Wipe
Samplers's Name: Zach Conder											_									WW= Waste Water
		Collection		_		Number	Number of preserved bottles	ved bottle	S										A = Air	Air
No. Field ID / Point of Collection						/Zn te	4	04				d								
	Sample Depth	Date	Time	# Matrix bo	# of bottles	NaOH/ Acetate	H2SO4	NaHSC	MEOH NONE	TPH Chlo	BTE	Hold						л	Field Comments	nments
1 SE-2D @ 12'	12'	3/22/2018	10:15	S					-	×	^			_		_				
2 SE-2D @ 20'	20'	3/22/2018	10:20	s	-					×	^									
3 SE-2E @ 3'	3	3/22/2018	10:25	S	-					×	^			_						
4 SE-2E @ 6'	6'	3/22/2018	10:30	S	_					×			_							
5 NE-1A @ 18'	18'	3/22/2018	10:35	S	-					××	×									
6 NE-1B @ 10'	10'	3/22/2018	10:40	s	-					×	×									
7 NE-1B @ 20'	20'	3/22/2018	10:45	S	-					×	×									
8 NE-1C @ 3'	۵	3/22/2018	10:50	S	-					~	^			_		_				
9 NE-1C @ 12'	12'	3/22/2018	10:55	s	1					×	^				_	-	-	2		
10 NE-1C @ 20'	20'	3/22/2018	11:00	S	-					~	^					Temp:		6		IR ID:R-8
11 N-1A @ 18'	18'	3/22/2018	11:05	S	-					××	×				0	F:(0-	6: -0	CF:(0-6: -0.2°C)	_	
12 N-1B @ 10'	10'	3/22/2018	11:10	S	1					×	×					(6-	23:+	(6-23: +0.2°C)	0	
13 N-1B @ 20'	20'	3/22/2018	11:15	S	1					× ×	×				0	orrec	ted 1	Corrected Temp:	а. _	4
14 N-1C @ 3'	۵	3/22/2018	11:20	S	1					×	^				_	-				
Turnaround Time ( Business days)				Data	Deliverabl	Data Deliverable Information	5						Notes:	es:						
Same Day TAT 5 Day TAT			Leve	Level II Std QC	v		Level	Level IV (Full Data Pkg /raw data)	ata Pkg /r	aw data			lowny@	rcsoluti	ilowry@trcsolutions.com			22	conder@	zconder@trcsolutions.com
Next Day EMERGENCY			Leve	Level III Std QC+ Forms	C+ Forms			TRRP Level IV					rhaskell@concho.com	@conch	o.com					
2 Day EMERGENCY X Contract TAT	AT		Leve	Level 3 (CLP Forms)	orms)		UST /	UST / RG -411					<b>k</b> blackbi	ırn@trc	kblackburn@trcsolutions.com	.com				
3 Day EMERGENCY			TRR	TRRP Checklist	st								dneel2@concho.com	conche	.com					
TAT Starts Day received by Lab, if received by 5:00 pm	5:00 pm												FED-EX	UPS: T	FED-EX / UPS: Tracking #					
Relinquished by Sampler:	SAMPLE CUSTOF THE OCCUMENTED ELEVANCE SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY	: DOCUMENTED	Received By:	H TIME SAN	APLES CH	ANGE POSS	Reling	Relinquished By:	OURIER	T	-	Date Time:	A	Rece	Received By:	N	P	M	0	
Relinquished by:	Date Time:		Received By:	š			Relfing	Relfnquished By:			Date	Date Time:		Rece	Received By		-		{	(
Relinquished by: 5	Date Time:		Received By: 5	зу:			Custor	Custody Seal #		Pr	eserved	where a	Preserved where applicable	ē	70		Coole	Cooler Temp.	Therr	Thermo. Corr. Factor
Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost or samples and site on the cost of samples and site on the cost of samples and site on the cost of samples are proporting to the cost of samples and site on the cost of samples and site on the cost of samples and site on the cost of samples are provided to the cost of samples and site of \$75 will be applied to each project. Xencos liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$50 will be applied to each project. Xencos liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$50 will be applied to each project. Xencos liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$50 will be applied to each project. Xencos liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$50 will be applied to each project. Xencos liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$50 will be applied to each project. Xencos liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$50 will be applied to each project. Xencos liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$50 will be applied to each project. Xencos liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$50 will be applied to each project. Xencos liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be applied to each project. Xencos liability will be limited to th	constitutes a valid p inces beyond the c	ontrol of Xenco. /	om client comp A minimum cha	any to Xenc arge of \$75 v	o, its affiliat vill be appli	ed to each p	ontractors. I roject. Xenc	t assigns sta o's liability v	andard terr vill be limit	ns and co ed to the c	nditions c ost of sa	mples. Ar	Xenco w w sample	II be liabl	e only forte I by Xenco	he cost of but not a	samples a valvzed wil	nd shall no	ot assume	any responsibility for any

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Stafford,Texas (281-240-4200) Dallas Texas (214-902-0300)

# CHAIN OF CUSTODY

Page 3 Of 4

San Antonio, Texas (210-509-3334) Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

				WWW X0	www.xenco.com						alutio	Analytical Information	Xer	Xenco Job #	1	3080	6	29 Matrix Codes
Client / Reporting Information			Project	Project Information	2								_					
Company Name / Branch: TRC Environmental Corporation	0 P	GJ West Coop Unit #108	umber: 0 Unit #108														W = Water	W = Water S - Soil/Sed/Solid
Company Address:	1 10	oject Location															GW =Gr	GW =Ground Water
2057 Commerce Drive Midland, TX 79703		Eddy Co, NM											2.12				DW = Drinki P = Product	DW = Drinking Water P = Product
Email: Phone No: <u>ilowny@trcsolutions.com</u> 432-466-4450 zconder@trcsolutions.com	u Q	Invoice To: COG Operating C/O Becky Haskell	C/O Becky Has	skell													SW = Surfac	SW = Surface water SL = Sludge
Project Contact: Joel Lowry	=	Invoice:							xt								WI = Wipe	pe
Samplers's Name: Zach Conder																	WW= Wa	WW= Waste Water
		Collection			Num	Number of preserved bottles	erved bottle						-				A = Air	
No. Field ID / Point of Collection					'Zn e	4	04				I							
	Sample Depth	Date	Time	# of Matrix bottles	o HCI NaOH/Z Acetate	HNO3 H2SO4	NaOH NaHSO	MEOH	TPH Chlor	BTE)	Hold					_	Field Comments	ents
1 NW-1A @ 18'	18'	3/23/2018								-			_	_				
2 NW-1B @ 10'		3/23/2018	11:30	s 1					× ×	×			_					
3 NW-1B @ 20'	20'	3/23/2018	11:35	S 1					× ×	×			_					
4 NW-1C @ 3'	3	3/23/2018	11:40	s 1					×	_								
5 NW-1C @ 6'	6'	3/23/2018	11:45	S 1					×				_					
6 NW-1C @ 9'		3/23/2018	11:50	s 1					×	-			-					
7 NW-1C @ 20'	20'	3/23/2018	11:55	s 1					×				_					
8 NW-1D @ 3'	ų	3/23/2018	12:00	S 1					×				_					
9 NW-1D @ 6'	6	3/23/2018	12:05	s 1					×									
10 NW-1D @ 9'	9'	3/23/2018	12:10	S 1					×					-				
11 NW-1D @ 20'	20'	3/23/2018	12:15	S 1					×				-	Temp:		Ē	R	IR ID.R-8
12 SW-1A @ 18'		3/23/2018	12:20	S 1					× ×	×				CF:((	)-6: -	CF:(0-6: -0.2°C)	:	
13 SW-1B @ 10'	10'	3/23/2018	12:25	S 1					× ×	×				(6	-23:	(6-23: +0.2°C)		
14 SW-1B @ 20'	20'	3/23/2018	12:30	S 1					×	×			_	Corre	cted	Corrected Temn	-	
15 SW-1C @ 3'	ų	3/23/2018	12:35	s 1					×					-		0	1	
Turnaround Time ( Business days)				Data De	Data Deliverable Information	nation						N	Notes:					
Same Day TAT 5 Day TAT			Level	Level II Std QC		Lev	Level IV (Full Data Pkg /raw data)	ata Pkg /ra	iw data)			lowny@	trcsol	llowry@trcsolutions.com		IN	conder@tr	zconder@trcsolutions.com
Next Day EMERGENCY		_	Level	Level III Std QC+ Forms	Forms		TRRP Level IV					rhaske	l@con	rhaskell@concho.com				
2 Day EMERGENCY X Contract TAT		_	Level	Level 3 (CLP Forms)	ns)	Sn	UST / RG -411					kblackt	ourn@t	kblackburn@trcsolutions.com	Ĭ			
3 Day EMERGENCY		_	TRRP	TRRP Checklist								dneel2	@conc	dneel2@concho.com				
TAT Starts Day received by Lab, if received by 5:00 pm	pm		-									FED-E)	(/UPS	FED-EX / UPS: Tracking #				
Relinquished by Sampler:     SAMPLE CUSTOF WIGHT FE DOCUMENTED BELOW BACKTIME SAMPLES CHARGE POSSESSION, INCLUDING COURIER DELIVERY       Relinquished by Sampler:     Date Time:       Relinquished by Sampler:     Date Time:	Date Time:		Received By:	VIME SAMP	T-N	Reli	Relinquisined By:	SOURIER DE	ELIVERY	/\	Date Time:	A	R	Received By	N.	NAN	00	
Relinquished by:			Received By	Y. Y. C. C.	ł	Relin	Relinquished By:			Date	Date Tinte:	£	R	Received By:			X	t
Relinquished by:	Date Time:		Received By:	Y.		Cust	-+ Custody Seal #		Pre	served	where	Preserved where applicable	ble	On Ice	6	Cooler Temp.	Thermo	Thermo. Corr. Factor
Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xanco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility or any losses or expenses incurred by the Client it such assigns are due to circumstances beyond the control of Xanco. A minimum charge of \$75 will be applied to each project. Xencos liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously necolitated under a fully executed client control of Xanco. A minimum charge of \$75 will be applied to each project. Xencos liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously necolitated under a fully executed client control of Xenco.	utes a valid pure beyond the cont ct.	chase order fron rol of Xenco. A	n client compa minimum char	ny to Xenco, i ge of \$75 will	ts affiliates and be applied to ea	subcontractor ach project. Xe	s. It assigns st enco's liability	andard term vill be limite	is and cor d to the c	ditions of sa	f service nples. A	. Xenco ny samp	will be lia les recei	able only for the ved by Xenco but	cost of si it not ana	amples and shall r lyzed will be invoi	tot assume an ced at \$5 per	y responsibility for sample. These terr

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Stafford, Texas (281-240-4200) Dallas Texas (214-902-0300)

# CHAIN OF CUSTODY

San Antonio, Texas (210-509-3334) Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

				WWW.X	www.xenco.com											Xe	Xenco Job #	*	J	L.	$\alpha$	aloc	~		
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Client / Reporting Information			Projec	Project Information	on													_							
Company Name / Branch: TRC Environmental Corporation		Project Name/Number: GJ West Coop Unit	Number: nn I Jnit #108								l											<i>s</i> <	W = Water S = Soil/Sed/Solid	ter	
Company Address:		Project Location:	on:																			م	GW =Ground Water	puno.	Vater
2057 Commerce Drive Midland, TX 79703		Eddy Co, NM																					DW = Drinki	rinking	DW = Drinking Water P = Product
-		Invoice To:																				<u>د</u> ،	SW = Surface water	urface	water
ilowry@trcsolutions.com 432-466-4450 zconder@trcsolutions.com		COG Operating C/O Becky Haskell	y C/O Becky Ha	iskell																		<u>م</u>	SL = Sludge	udge	SL = Sludge OW =Ocean/Sea Water
Project Contact:		Invoico:									t											< /	WI = Wipe	pe	
Samplers's Name: Zach Conder											E>	00	3									< -	U = UII WW= Waste Water	aste M	ater
		Collection	Contraction of the second	_		Number of preserved hottles	of pres	erved	hottle		5 M	E 3	21B										A = Air	date v	rate
No Field ID / Point of Collection		Conconci						GIVEN	DOILIG	- 0	3015	ide I	802												
	Sample		Timo	# of	iCi	aOH/Zi cetate	2504	aOH	aHSO4	ONE	FPH 8	Chlori	BTEX	lold										opto	
1 SW-1C @ 12'	j.	3/23/2018			-	_		-+	-	-		×				+	-	+							
2 SW-1C @ 20'	₩20 4	3/23/2018	12:45	s 1					_			×				_	-								
3 S-1A @ 18'	39	3/23/2018	12:50	S 1	_		_			_	×	×	×				_	_							
4 S-1B @ 10'	jĝi	3/23/2018	12:55	s _	_		_		_		×	×	×			_	-								
5 S-1B @ 20'	40 40	3/23/2018	13:00	s 1	_		_			_	×	×	×			_	-								
6 S-1C @ 3'	ken	3/23/2018	13:05	s 1	_					-		×				_	_	_							
7 S-1C @ 12'	1212	3/23/2018	13:10	S 1			_			_		×				_	-	_							
8 S-1C @ 20'	1.02	3/23/2018	13:15	s 1	_					_		×						3	-	0	>				
9 S-2 @ 3'	\$203	3/23/2018	13:20	s 1	_		_		_	$\neg$		×				_	. –				0		R	IR ID:R-8	8
10 S-2 @ 12'	钠	3/23/2018	13:25	S 1	_					_	_	×				_					c C	2			
11 S-2 @ 20'	20'	3/23/2018	13:30	s	_							×					۲	) ) (	0-23	1 +	(0-23: +U.2°C)				
12										_							_	Corrected Lemp: /	CLE	0 6	mp:	-	_		
Turnaround Time ( Business days)				Data I	Data Deliverable Information	Informatio	on								z	Notes:									
Same Day TAT 5 Day TAT			Leve	Level II Std QC			E.	Level IV (Full Data Pkg /raw	Full Da	ıta Pk		data)			lowny	a trcsc	ilowry@trcsolutions.com	.com				zcono	der@tru	solutio	zconder@trcsolutions.com
Next Day EMERGENCY			Leve	Level III Std QC+ Forms	+ Forms		Ц Н	TRRP Level IV	/el IV						haske	ll@co	rhaskell@concho.com	m							
2 Day EMERGENCY X Contract TAT	-		Leve	Level 3 (CLP Forms)	orms)		L s	UST / RG -411	-411						<b>k</b> black	ourn@	kblackburn@trcsolutions.com	itions.c	mo						
3 Day EMERGENCY				TRRP Checklist	Ŧ										dneel2	@con	dneel2@concho.com	B							
TAT Starts Day received by Lab, if received by 5:00 pm	5:00 pm		-												FED-E	(/ UP:	FED-EX / UPS: Tracking #	ding #							
	SAMPLE CUSTODY MUST BE DOCUMENTED BELOW BACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY	DOCUMENTED	BELOW EAC	H-TIME SAM	PLES CHA	NGE POSS	SESSION	, INCLU	IDING (	OURI	R DEL	IVERY						10					-		
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Relinquished by:	Date Time:	1	Received	hinor	<		Refi	Refinquished By:	ed By				Date Time:	Time:		T	Received By	By:	1				-		
Relinquished by:	Date Time:		Received By:	ŝy:			Cus	Custody Seal #	eal #			Pres	erved	where	Preserved where applicable	ble	1	9		Coo	Cooler Temp.		Thermo. Corr. Factor	. Corr.	Factor
Notice: Notice: Signature of this document and relinquishment of samples co losses or expenses incurred by the Client if such losses are due to circumstar	institutes a valid p	ourchase order fr	om client compa	any to Xenco	o, its affiliate	is and subc	contracto	anno'e l	igns sta	Indard	erms al	nd cond	tions of	service	Xenco	will be I	able onl	y for the	cost of	sample	s and/sh	all not as	sume ar	y respon	sibility for a
5 Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and/shall not assume any responsibility for any losses or expenses incurred by the Client fauch losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per sample. These terms	nstitutes a valid p ces beyond the c	ourchase order fr ontrol of Xenco.	5 om client comp A minimum cha	any to Xencc arge of \$75 w	o, its affiliate vill be applie	is and subc	ontracto project. X	rs. It ass enco's l	igns sta iability v	indard vill be li	erms au mited to	nd cond the cos	tions of	service.	Xenco	will be I	able onl	y for the	cost of		ample	amples and sha	amples and shall not as	amples and/shall not assume an	amples and shall not assume any respon



# **XENCO** Laboratories



BORATORIES Prelogin/Nonconformance Report- Sample Log-In

Client: TRC Solutions, Inc	Acceptable Temperature	Range: 0 - 6 degC
Date/ Time Received: 03/29/2018 04:14:00 PM	Air and Metal samples Ac	cceptable Range: Ambient
Work Order #: 580869	Temperature Measuring of	device used:R8
Sample Rec	eipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.4	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/ cooler?	N/A	
#5 Custody Seals intact on sample bottles?	N/A	
#6*Custody Seals Signed and dated?	N/A	
#7 *Chain of Custody present?	Yes	
#8 Any missing/extra samples?	No	
#9 Chain of Custody signed when relinquished/ received?	Yes	
#10 Chain of Custody agrees with sample labels/matrix?	Yes	
#11 Container label(s) legible and intact?	Yes	
#12 Samples in proper container/ bottle?	Yes	TPH RECEIVED IN BULK CONTAINER
#13 Samples properly preserved?	Yes	
#14 Sample container(s) intact?	Yes	
#15 Sufficient sample amount for indicated test(s)?	Yes	
#16 All samples received within hold time?	Yes	
#17 Subcontract of sample(s)?	No	
#18 Water VOC samples have zero headspace?	N/A	

### \* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#:

Checklist completed by: Katie Lowe

Date: 03/29/2018

Checklist reviewed by: Jessica Kramer

Date: 03/30/2018

# Analytical Report 581272

for TRC Solutions, Inc

Project Manager: Joel Lowry GJ West Coop Unit #108

09-APR-18

Collected By: Client





1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215-18-24), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142)

> Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12) Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-18-14) Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757) Xenco-Atlanta (LELAP Lab ID #04176)



09-APR-18



Project Manager: **Joel Lowry TRC Solutions, Inc** 2057 Commerce Midland, TX 79703

Reference: XENCO Report No(s): **581272 GJ West Coop Unit #108** Project Address: Eddy Co, NM

### Joel Lowry:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 581272. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 581272 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Huns hoah

Kelsey Brooks Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994. Certified and approved by numerous States and Agencies. A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America



## Sample Cross Reference 581272



### TRC Solutions, Inc, Midland, TX

GJ West Coop Unit #108

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
RP-N @28'	W	03-29-18 09:00	28 ft	581272-001
RP-N @37'	W	03-29-18 09:05	37 ft	581272-002
RP-S @28'	W	03-29-18 09:10	28 ft	581272-003
RP-S @ 31'	W	03-29-18 09:15	31 ft	581272-004
RP-S @ 34'	W	03-29-18 09:20	34 ft	581272-005
N-A@20'	W	03-29-18 09:25	20 ft	581272-006
N-A@23'	W	03-29-18 09:30	23 ft	581272-007
N-A@26'	W	03-29-18 09:35	26 ft	581272-008
NW-A@20'	W	03-29-18 09:40	20 ft	581272-009
NW-A@23'	W	03-29-18 09:45	23 ft	581272-010
NW-A@29'	W	03-29-18 09:50	29 ft	581272-011



### CASE NARRATIVE

Client Name: TRC Solutions, Inc Project Name: GJ West Coop Unit #108

Project ID: Work Order Number(s): 581272 Report Date: 09-APR-18 Date Received: 04/04/2018

### Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments: Batch: LBA-3045902 Inorganic Anions by EPA 300 Nitrate as N RPD was outside laboratory control limits. Samples in the analytical batch are: 581272-004, -005, -010, -011



Project Id: Contact:

Contact:Joel LowryProject Location:Eddy Co, NM

Certificate of Analysis Summary 581272

TRC Solutions, Inc, Midland, TX Project Name: GJ West Coop Unit #108



Date Received in Lab:Wed Apr-04-18 10:48 amReport Date:09-APR-18Project Manager:Kelsey Brooks

	Lab Id:	581272-0	01	581272-0	02	581272-0	03	581272-0	04	581272-0	05	581272-0	06
Analysis Requested	Field Id:	RP-N @2	28'	RP-N @3	37'	RP-S @2	28'	RP-S @ 3	31'	RP-S @ 3	34'	N-A@20	יכ
Analysis Kequeslea	Depth:	28- ft		37- ft		28- ft		31- ft		34- ft		20- ft	
	Matrix:	WATE	ર	WATEI	ર	WATE	ર	WATER	Ł	WATE	۶ ا	WATEF	٤
	Sampled:	Mar-29-18 (	09:00	Mar-29-18 (	09:05	Mar-29-18 (	)9:10	Mar-29-18 (	9:15	Mar-29-18 (	09:20	Mar-29-18 (	9:25
Chloride by EPA 300	Extracted:	Apr-05-18	15:00	Apr-05-18 1	5:00	Apr-05-18 1	5:00	Apr-05-18 1	7:00	Apr-05-18 1	7:00	Apr-05-18 1	5:00
	Analyzed:	Apr-05-18	17:58	Apr-05-18 1	8:04	Apr-05-18 1	8:09	Apr-05-18 2	3:01	Apr-05-18 2	23:06	Apr-05-18 1	5:45
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		3440	25.0	8560	98.8	1830	25.0	1030	24.8	853	4.90	564	4.98

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Huns Boah

Kelsey Brooks Project Manager

Final 1.000



Project Id:

Contact:Joel LowryProject Location:Eddy Co, NM

Certificate of Analysis Summary 581272

TRC Solutions, Inc, Midland, TX Project Name: GJ West Coop Unit #108



Date Received in Lab:Wed Apr-04-18 10:48 amReport Date:09-APR-18Project Manager:Kelsey Brooks

	Lab Id:	581272-0	07	581272-0	08	581272-0	09	581272-0	10	581272-0	)11	
Analysis Requested	Field Id:	N-A@2	3'	N-A@2	6'	NW-A@	20'	NW-A@2	23'	NW-A@	29'	
Anulysis Kequesieu	Depth:	23- ft		26- ft		20- ft		23- ft		29- ft		
	Matrix:	WATE	R	WATE	R	WATE	ર	WATE	ł	WATE	R	
	Sampled:	Mar-29-18 (	09:30	Mar-29-18	09:35	Mar-29-18	09:40	Mar-29-18 (	)9:45	Mar-29-18	09:50	
Chloride by EPA 300	Extracted:	Apr-05-18	15:00	Apr-05-18	15:00	Apr-05-18	5:00	Apr-05-18 1	7:00	Apr-05-18	17:00	
	Analyzed:	Apr-05-18	16:01	Apr-05-18	16:06	Apr-05-18	6:59	Apr-05-18 2	3:12	Apr-05-182	23:27	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
Chloride		486	24.9	412	4.91	179	4.97	375	5.00	265	4.97	

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Huns Boah

Kelsey Brooks Project Manager



## **Flagging Criteria**



- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- **E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- **H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- **K** Sample analyzed outside of recommended hold time.
- **JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- \*\* Surrogate recovered outside laboratory control limit.
- **BRL** Below Reporting Limit.
- RL Reporting Limit
- MDL Method Detection LimitSDLSample Detection LimitLOD Limit of Detection
- PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation
- DL Method Detection Limit
- NC Non-Calculable

SMP Clie	ent Sample	BLK	Method Blank	
BKS/LCS	S Blank Spike/Laboratory Control Sample	BKSD/LCSD	Blank Spike Duplicate/Labor	ratory Control Sample Duplicate
MD/SD	Method Duplicate/Sample Duplicate	MS	Matrix Spike	MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

\* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



## **BS / BSD Recoveries**



## Project Name: GJ West Coop Unit #108

Work Order	r#: 581272							Pro	ject ID:						
Analyst:	OJS		Date Prepa	red: 04/05/20	18			Date A	nalyzed:	04/05/2018					
Lab Batch ID	<b>Sar Sar</b>	nple: 7642124-1-BKS	Bat	c <b>h #:</b> 1					Matrix:	Solid					
Units:	mg/kg		BLAN	NK /BLANK	SPIKE /	BLANK	ANK SPIKE DUPLICATE RECOVERY STUDY								
	Chloride by EPA 30	0 Blank Sample Resu [A]		Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag			
Analy	ytes		[B]	[C]	[D]	[E]	Result [F]	[G]							
Chloride		<5.00	250	236	94	250	232	93	2	90-110	20				
Analyst:	OJS		Date Prepa	red: 04/05/20	18	·		Date A	nalyzed:	04/05/2018					
Lab Batch ID	<b>Sar Sar</b>	nple: 7642125-1-BKS	Bate	c <b>h #:</b> 1		Matrix: Solid									
Units:	mg/kg		BLAN	NK /BLANK	SPIKE /	BLANK	SPIKE DUP	LICATE	RECOV	ERY STUI	DY				
Analy	Chloride by EPA 30 ytes	0 Blank Sample Resu [A]	Spike lt Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag			
Chloride		<5.00	250	252	101	250	242	97	4	90-110	20				

Relative Percent Difference RPD =  $200^{*}|(C-F)/(C+F)|$ Blank Spike Recovery [D] =  $100^{*}(C)/[B]$ Blank Spike Duplicate Recovery [G] =  $100^{*}(F)/[E]$ All results are based on MDL and Validated for QC Purposes



## Form 3 - MS / MSD Recoveries

#### Project Name: GJ West Coop Unit #108



Work Order # :	581272						Project II	):						
Lab Batch ID:	3045902	QC- Sample ID:	581273	-005 S	Ba	tch #:	1 Matrix	k: Soil						
Date Analyzed:	04/05/2018	Date Prepared:	04/05/2	018	Ar	alyst: (	OJS							
<b>Reporting Units:</b>	mg/kg		Ν	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY				
	Chloride by EPA 300	Parent Sample Result	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag		
	Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD			
Chloride		145	250	393	99	250	394	100	0	90-110	20			
Lab Batch ID:	3045902	QC- Sample ID:	581462	-001 S	Ba	tch #:	1 Matrix	<b>k:</b> Soil						
Date Analyzed:	04/05/2018	Date Prepared:	04/05/2	018	Ar	alyst: (	OJS							
<b>Reporting Units:</b>	mg/kg	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY												
	Chloride by EPA 300	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag		
	Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD			
Chloride		35.5	246	278	99	246	277	98	0	90-110	20			
Lab Batch ID:	3045906	QC- Sample ID:	581272	-006 S	Ba	tch #:	1 Matrix	<b>k:</b> Water						
Date Analyzed:	04/05/2018	Date Prepared:	04/05/2	018	Ar	alyst: (	OJS							
<b>Reporting Units:</b>	mg/kg		Ν	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY				
	Chloride by EPA 300	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag		
	Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD			
Chloride		564	249	800	95	249	812	100	1	90-110	20			

Matrix Spike Percent Recovery  $[D] = 100^{*}(C-A)/B$ Relative Percent Difference RPD =  $200^{*}|(C-F)/(C+F)|$  Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



## Form 3 - MS / MSD Recoveries

#### Project Name: GJ West Coop Unit #108



Work Order # :	581272						Project II	<b>D</b> :				
Lab Batch ID:	3045906	QC- Sample ID:	581272	-009 S	Ba	tch #:	1 Matri	<b>x:</b> Water				
Date Analyzed:	04/05/2018	Date Prepared:	04/05/2	018	Ar	nalyst: (	DJS					
<b>Reporting Units:</b>	mg/kg		Μ	ATRIX SPIK	E / MAT	'RIX SPI	KE DUPLICA	TE REC	OVERYS	STUDY		
	Chloride by EPA 300	Parent Sample	Spike	Spiked Sample Result	Spiked Sample		Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Chloride		179	249	423	98	249	415	95	2	90-110	20	

Matrix Spike Percent Recovery  $[D] = 100^{*}(C-A)/B$ Relative Percent Difference RPD =  $200^{*}|(C-F)/(C+F)|$  Matrix Spike Duplicate Percent Recovery  $[G] = 100^{*}(F-A)/E$ 

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Page 10 of 12

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ATORIES CONTRACTOR	

Setting the Standard since 1990 Stafford, Texas (281-240-4200)

# CHAIN OF CUSTODY Samples had water

Page 1 Of 1

Midland, Texas (432-San Antonio, Texas (210-509-3334)

Phoenix, Arizona (480-355-0900)

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any losses or expenses incurred by the Client if such loss are due to cumptor sorvanues are run provinced or the control of Xenco. A minimum charge of \$75 will be applied to erms will be enforced unless previously negotiated under a fully executed client contract.	Relinquished by: 6 Notice: Notice: Signature of this document	Relinquished by: 3	-	Relinquished by Sampler:	TAT Starts Day receivec	3 Day EMERGENCY	2 Day EMERGENCY	Next Day EMERGENCY	Same Day TAT	Turnaround Time ( Business days)	12	11 NW-A @29'	10 NW-A @23'	9 NW-A @20'	8 N-A @ 26'	7 N-A @ 23'	6 N-A @ 20'	5 RP-S @ 34'	4 RP-S @ 31'	3 RP-S @ 28'	2 RP-N @ 37'	1 RP-N @ 28'	No. Field ID / Pc		Samplers's Name: Zach Conder	Project Contact: Joel Lowry	ilowry@trcsolutions.com zconder@trcsolutions.com	Midland, TX 79703 Email:	Company Address: 2057 Commerce Drive	Company Name / Branch: TRC Environmental Corporation	Client / Reporting Information			Dallas Texas (214-902-0300)
ent if sourprocessors of sourprocessors ent if such loses are due to circumstan gotiated under a fully executed client o	and relinquishment of samples constit	n <sup>3</sup>		SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER	TAT Starts Day received by Lab, if received by 5:00 pm		X Contract TAT	7 Day TAT	5 Day TAT	ss days)													Field ID / Point of Collection					Phone No:			ation			
ces beyond contract.	Date Time:	Date Time:	4/3/18	Y MUST BE	) pm							29'	23'	20'	26'	23'	20'	34'	31'	28'	37'	28'	Sample Depth											
the control of	Purchase orde		3.36	DOCUMENT								3/29/2018	3/29/2018	3/29/2018	3/29/2018	3/29/2018	3/29/2018	3/29/2018	3/29/2018	3/29/2018	3/29/2018	3/29/2018	Date	Collection		Invoice:	COG Operat	Invoice To:	Project Location: Eddy Co, NM	Project Nam GJ West (		1411		Midland,
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able only for the cost of samples and shall not assume any responsibility for eceived by Xenco but not analyzed will be invoiced at \$5 per sample. These	Thermo. Corr. Factor	]	4						zconder@trcsolutions.com														Field Comments	Air	WW= Waste Water	Wipe	SW = Surface Water SL = Sludge OW =Ocean/Sea Water	P = Product	GW =Ground Water	W = Water S = Soil/Sed/Solid		Matrix Codes		
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## **XENCO** Laboratories



BORATORIES Prelogin/Nonconformance Report- Sample Log-In

Acceptable Temperature R	Range: 0 - 6 degC
Air and Metal samples Acc	eptable Range: Ambient
Temperature Measuring de	evice used:R8
ipt Checklist	Comments
3.4	
Yes	
Yes	
N/A	
N/A	
N/A	
Yes	
No	
Νο	"Relinquished By" signature not there. Received samples by mail
Yes	
No	
N/A	
	Air and Metal samples Acc Temperature Measuring de ipt Checklist 3.4 Yes Yes N/A N/A N/A Yes No No Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes

#### \* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#:

Checklist completed by:

Date: 04/04/2018

Checklist reviewed by: Jessiga Vramer

Jessica Kramer

Katie Lowe

Date: 04/05/2018

# Analytical Report 583692

for TRC Solutions, Inc

Project Manager: Joel Lowry GJ West Coop Unit #108

#### 30-APR-18

Collected By: Client



#### 6701 Aberdeen, Suite 9 Lubbock, TX 79424

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-18-24), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12) Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16) Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-14) Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757) Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757) Xenco-Atlanta (LELAP Lab ID #04176) Xenco-Tampa: Florida (E87429) Xenco-Lakeland: Florida (E84098)



30-APR-18

Project Manager: Joel Lowry TRC Solutions, Inc 2057 Commerce Midland, TX 79703

Reference: XENCO Report No(s): **583692 GJ West Coop Unit #108** Project Address: Eddy Co. N.M.

#### Joel Lowry:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 583692. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 583692 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Huns hoah

Kelsey Brooks Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994. Certified and approved by numerous States and Agencies. A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America



Sample Cross Reference 583692

## TRC Solutions, Inc, Midland, TX

GJ West Coop Unit #108

Matrix	Date Collected	Sample Depth	Lab Sample Id
S	04-24-18 11:00	4 ft	583692-001

Sample Id

S-3



## CASE NARRATIVE

Client Name: TRC Solutions, Inc Project Name: GJ West Coop Unit #108

Project ID: Work Order Number(s): 583692 Report Date: 30-APR-18 Date Received: 04/25/2018

#### Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



Project Id: Contact:

Contact:Joel LowryProject Location:Eddy Co. N.M.

Certificate of Analysis Summary 583692

TRC Solutions, Inc, Midland, TX Project Name: GJ West Coop Unit #108

Date Received in Lab:Wed Apr-25-18 04:10 pmReport Date:30-APR-18Project Manager:Kelsey Brooks

	Lab Id:	583692-001			
Analysis Requested	Field Id:	S-3			
Anulysis Kequesieu	Depth:	4- ft			
	Matrix:	SOIL			
	Sampled:	Apr-24-18 11:00			
Chloride by EPA 300	Extracted:	Apr-26-18 10:00			
	Analyzed:	Apr-26-18 17:59			
	Units/RL:	mg/kg RL			
Chloride		10000 2500			

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Huns Boah

Kelsey Brooks Project Manager



# **Flagging Criteria**

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- **F** RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- **H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- **K** Sample analyzed outside of recommended hold time.
- **JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- \*\* Surrogate recovered outside laboratory control limit.
- **BRL** Below Reporting Limit.
- RL Reporting Limit
- MDL Method Detection LimitSDLSample Detection LimitLOD Limit of Detection
- PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation
- DL Method Detection Limit
- NC Non-Calculable

SMP Clie	ent Sample	BLK	Method Blank	
BKS/LCS	S Blank Spike/Laboratory Control Sample	BKSD/LCSD	Blank Spike Duplicate/Labor	ratory Control Sample Duplicate
MD/SD	Method Duplicate/Sample Duplicate	MS	Matrix Spike	MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

\* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



## **BS / BSD Recoveries**

## Project Name: GJ West Coop Unit #108

Work Order	r #: 583692								Proj	ect ID:			
Analyst:	RNL		Da	ate Prepar	ed: 04/26/201	8			Date A	nalyzed: (	04/26/2018		
Lab Batch ID	<b>:</b> 3048167 <b>Sa</b>	mple: 7643571-1-Bl	KS	Batcl	<b>h #:</b> 1					Matrix: S	Solid		
Units:	mg/kg			BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY									
	Chloride by EPA 3		Blank ample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analy	ytes			[B]	[C]	[D]	[E]	Result [F]	[G]				
Chloride			<25.0	250	253	101	250	253	101	0	90-110	20	

Relative Percent Difference RPD =  $200^{*}|(C-F)/(C+F)|$ Blank Spike Recovery [D] =  $100^{*}(C)/[B]$ Blank Spike Duplicate Recovery [G] =  $100^{*}(F)/[E]$ All results are based on MDL and Validated for QC Purposes



## Form 3 - MS / MSD Recoveries

#### Project Name: GJ West Coop Unit #108

Work Order # :	583692						Project II	):				
Lab Batch ID:	3048167	QC- Sample ID:	583697	-005 S	Ba	tch #:	1 Matrix	<b>x:</b> Soil				
Date Analyzed:	04/26/2018	Date Prepared:	04/26/2	018	An	alyst: F	RNL					
<b>Reporting Units:</b>	mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
	Chloride by EPA 300	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample		RPD	Control Limits	Control Limits	Flag
	Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Chloride		33.3	250	324	116	250	327	117	1	80-120	20	
Lab Batch ID:	3048167	QC- Sample ID:	583724	-002 S	Ba	tch #:	1 Matrix	<b>x:</b> Soil				
Date Analyzed:	04/26/2018	Date Prepared:	04/26/2	018	An	alyst: F	RNL					
<b>Reporting Units:</b>	mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
	Chloride by EPA 300	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	-	RPD	Control Limits	Control Limits	Flag
	Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Chloride		<25.0	250	273	109	250	273	109	0	80-120	20	

Matrix Spike Percent Recovery [D] = 100\*(C-A)/BRelative Percent Difference RPD = 200\*|(C-F)/(C+F)| Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E



Stafford,Texas (281-240-4200)

CHAIN OF CUSTODY

San Antonio, Texas (210-509-3334)

Phoenix, Arizona (480-355-0900)

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Biology         Biology <t< td=""><td>TRC Environmental Corporation</td><td></td><td>Project Name GJ West C</td><td>/Number: pop Unit #10</td><td>8</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>_</td><td></td><td>N = W</td><td>ator</td></t<>	TRC Environmental Corporation		Project Name GJ West C	/Number: pop Unit #10	8										_		N = W	ator
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Image: market in the state in the	I, TX 79703												_	_		_		round Water Drinking Water
Markation         Markation <t< td=""><td>ilowry@trcsolutions.com zconder@trcsolutions.com</td><td></td><td>Invoice To: COG Operatir</td><td></td><td>Haskell</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>oduct burface water</td></t<>	ilowry@trcsolutions.com zconder@trcsolutions.com		Invoice To: COG Operatir		Haskell													oduct burface water
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		1		Level	III Std QC	+ Forms		TRRP	Level IV				rhaskel	@concho.co	E			
	×			Level	3 (CLP Fo	rms)	Ш		RG -411				kblackb	um@trcsolu	ions com			
	3 Day EMERGENCY		-	TRRP	Checklist								0100p					
	TAT Starts Day received by Lab, if received by 5:00	md 0			+								ni leel Z	gconcho.cor	~			
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ľ	wouce: Notice: Signature of this document and relinquishment of samples constitu- any losses or expenses incurred by the Client if such loses are due to circumentance	Ites a valid pur	chase order from	client compar	ly to Xenco	its affiliate	s and subco	ntractors. It	assions sta	hdard term					1	11	525	オシ

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## **XENCO** Laboratories BORATORIES Prelogin/Nonconformance Report- Sample Log-In

Client: TRC Solutions, Inc	Acceptable Temperature Range: 0 - 6 degC
Date/ Time Received: 04/25/2018 04:10:00 PM	Air and Metal samples Acceptable Range: Ambient
Work Order #: 583692	Temperature Measuring device used : IR-3
Sample Rece	ipt Checklist Comments
#1 *Temperature of cooler(s)?	3.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6*Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	Νο
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	Νο
#18 Water VOC samples have zero headspace?	N/A

#### \* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#:

Date: 04/26/2018

Checklist completed by: Brenda Ward Brenda Ward Checklist reviewed by: Marghorah Kelsey Brooks

Date: 04/30/2018

# Analytical Report 581273

for TRC Solutions, Inc

Project Manager: Joel Lowry

GJ West Coop Unit #011

## 11-APR-18

Collected By: Client





## 1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215-18-24), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142)

> Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12) Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-18-14) Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757) Xenco-Atlanta (LELAP Lab ID #04176)



11-APR-18



Project Manager: **Joel Lowry TRC Solutions, Inc** 2057 Commerce Midland, TX 79703

Reference: XENCO Report No(s): **581273 GJ West Coop Unit #011** Project Address: Eddy Co, NM

#### Joel Lowry:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 581273. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 581273 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Huns hoah

Kelsey Brooks Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994. Certified and approved by numerous States and Agencies. A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America



## Sample Cross Reference 581273



## TRC Solutions, Inc, Midland, TX

GJ West Coop Unit #011

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
RP @3'	S	03-30-18 10:50	3 ft	581273-001
RP @9'	S	03-30-18 10:55	9 ft	581273-002
RP @18'	S	03-30-18 11:00	18 ft	581273-003
RP-2 @3'	S	03-30-18 11:05	3 ft	581273-004
RP-2 @6'	S	03-30-18 11:10	6 ft	581273-005
RP-2 @18'	S	03-30-18 11:15	18 ft	581273-006
N @3'	S	03-30-18 11:20	3 ft	581273-007
N @6'	S	03-30-18 11:25	6 ft	581273-008
N @18'	S	03-30-18 11:30	18 ft	581273-009
N-2 @3'	S	03-30-18 11:35	3 ft	581273-010
N-2 @6'	S	03-30-18 11:40	6 ft	581273-011
N-2 @18'	S	03-30-18 11:45	18 ft	581273-012
E @3'	S	03-30-18 11:50	3 ft	581273-013
E @9'	S	03-30-18 11:55	9 ft	581273-014
E @18'	S	03-30-18 12:00	18 ft	581273-015
E-2 @3'	S	03-30-18 12:05	3 ft	581273-016
E-2 @9'	S	03-30-18 12:10	9 ft	581273-017
E-2 @18'	S	03-30-18 12:15	18 ft	581273-018
W @3'	S	03-30-18 12:20	3 ft	581273-019
W @6'	S	03-30-18 12:25	6 ft	581273-020
W @18'	S	03-30-18 12:30	18 ft	581273-021
W-2 @SURFACE'	S	03-30-18 12:35	0 - 3 ft	581273-022
W-2 @2'	S	03-30-18 12:40	2 ft	581273-023
W-2 @8'	S	03-30-18 12:45	8 ft	581273-024
S@SURFACE	S	04-02-18 10:00	0 - 3 ft	581273-025
S@2'	S	04-02-18 10:05	2 ft	581273-026
S@8'	S	04-02-18 10:10	8 ft	581273-027
DT-1@3'	S	04-02-18 11:00	3 ft	581273-028
DT-1@6'	S	04-02-18 11:05	6 ft	581273-029
DT-1@18'	S	04-02-18 11:10	18 ft	581273-030
DT-2@SURFACE	S	04-02-18 11:15	0 - 3 ft	581273-031
DT-2@4'	S	04-02-18 11:20	2 ft	581273-032
DT-2@8'	S	04-02-18 11:25	8 ft	581273-033
DT-3@SURFACE	S	04-02-18 11:30	0 - 3 ft	581273-034
DT-3@4'	S	04-02-18 11:35	4 ft	581273-035
DT-3@8'	S	04-02-18 11:40	8 ft	581273-036



## CASE NARRATIVE

Client Name: TRC Solutions, Inc Project Name: GJ West Coop Unit #011

Project ID: Work Order Number(s): 581273 Report Date: 11-APR-18 Date Received: 04/04/2018

#### Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

#### Analytical non conformances and comments:

Batch: LBA-3046056 BTEX by EPA 8021B

Lab Sample ID 581273-031 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 581273-028, -031, -034.

The Laboratory Control Sample for Toluene, Benzene, m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3046139 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



Project Id: Contact: Joel Lowry

Project Location: Eddy Co, NM

Certificate of Analysis Summary 581273

TRC Solutions, Inc, Midland, TX Project Name: GJ West Coop Unit #011



Date Received in Lab:Wed Apr-04-18 10:48 amReport Date:11-APR-18Project Manager:Kelsey Brooks

	Lab Id:	581273-0	001	581273-0	02	581273-0	03	581273-0	04	581273-0	05	581273-00	)6
	Field Id:	RP @3	r	RP @9		RP @18	5'	RP-2 @	3'	RP-2 @	6'	RP-2 @13	8'
Analysis Requested	Depth:	3- ft		9- ft		18- ft		3- ft		6- ft		18- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Mar-30-18	10:50	Mar-30-18 1	10:55	Mar-30-18 1	1:00	Mar-30-18	11:05	Mar-30-18	11:10	Mar-30-18 1	1:15
BTEX by EPA 8021B	Extracted:	Apr-05-18	16:30					Apr-05-18	6:30				
	Analyzed:	Apr-06-18 (	02:46					Apr-06-18 (	03:05				
	Units/RL:	mg/kg	RL					mg/kg	RL				
Benzene		< 0.00199	0.00199					< 0.00198	0.00198				
Toluene		< 0.00199	0.00199					< 0.00198	0.00198				
Ethylbenzene		< 0.00199	0.00199					< 0.00198	0.00198				
m,p-Xylenes		< 0.00398	0.00398					< 0.00396	0.00396				
o-Xylene		< 0.00199	0.00199					< 0.00198	0.00198				
Total Xylenes		< 0.00199	0.00199					< 0.00198	0.00198				
Total BTEX		< 0.00199	0.00199					< 0.00198	0.00198				
Chloride by EPA 300	Extracted:	Apr-05-18	17:00	Apr-05-18 1	7:00	Apr-05-18 1	7:00	Apr-05-18	7:00	Apr-05-18	7:00	Apr-05-18 1'	7:00
	Analyzed:	Apr-05-18	23:33	Apr-05-18 2	3:38	Apr-05-18 2	3:43	Apr-05-182	23:49	Apr-05-182	23:54	Apr-06-18 0	0:10
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		977	4.94	1890	24.9	241	4.93	1410	49.8	145	4.99	105	4.97
TPH by SW8015 Mod	Extracted:	Apr-06-18	06:00			Apr-06-18 0	6:00	Apr-06-18 (	)6:00			Apr-06-18 0	6:00
	Analyzed:	Apr-06-18	08:20			Apr-06-18 0	9:37	Apr-06-18	0:04			Apr-06-18 10	0:30
	Units/RL:	mg/kg	RL			mg/kg	RL	mg/kg	RL			mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0			<15.0	15.0	<15.0	15.0			<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0			<15.0	15.0	<15.0	15.0			<15.0	15.0
Oil Range Hydrocarbons (ORO)		<15.0	15.0			<15.0	15.0	<15.0	15.0			<15.0	15.0
Total TPH		<15	15			<15	15	<15	15			<15	15

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Huns Boah

Kelsey Brooks Project Manager



Certificate of Analysis Summary 581273

TRC Solutions, Inc, Midland, TX Project Name: GJ West Coop Unit #011



Date Received in Lab:Wed Apr-04-18 10:48 amReport Date:11-APR-18Project Manager:Kelsey Brooks

	1												
	Lab Id:	581273-0	007	581273-0	08	581273-0	09	581273-0	10	581273-0	11	581273-01	12
Analysis Requested	Field Id:	N @3	'	N @6'		N @18	·	N-2 @3	3'	N-2 @6	5'	N-2 @18	3'
Analysis Kequestea	Depth:	3- ft		6- ft		18- ft		3- ft		6- ft		18- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Mar-30-18	11:20	Mar-30-18 1	1:25	Mar-30-18 1	1:30	Mar-30-18	11:35	Mar-30-18 1	11:40	Mar-30-18 1	1:45
BTEX by EPA 8021B	Extracted:	Apr-05-18	16:30					Apr-05-18	6:30				
	Analyzed:	Apr-06-18	03:24					Apr-06-18 (	03:43				
	Units/RL:	mg/kg	RL					mg/kg	RL				
Benzene		< 0.00201	0.00201					< 0.00201	0.00201				
Toluene		< 0.00201	0.00201					< 0.00201	0.00201				
Ethylbenzene		< 0.00201	0.00201					< 0.00201	0.00201				
m,p-Xylenes		< 0.00402	0.00402					< 0.00402	0.00402				
o-Xylene		< 0.00201	0.00201					< 0.00201	0.00201				
Total Xylenes		< 0.00201	0.00201					< 0.00201	0.00201				
Total BTEX		< 0.00201	0.00201					< 0.00201	0.00201				
Chloride by EPA 300	Extracted:	Apr-05-18	17:00	Apr-05-18 1	7:00	Apr-05-18 1	7:00	Apr-05-18	7:00	Apr-05-18 1	7:00	Apr-05-18 1	7:00
	Analyzed:	Apr-06-18	00:15	Apr-06-18 0	0:31	Apr-06-18 0	0:36	Apr-06-18 (	00:42	Apr-06-180	00:47	Apr-06-18 0	0:52
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		178	4.97	1390	24.6	1310	24.9	21.6	4.97	322	4.90	119	4.96
TPH by SW8015 Mod	Extracted:	Apr-06-18	06:00			Apr-06-18 0	6:00	Apr-06-18 (	)6:00		ĺ	Apr-06-18 0	6:00
	Analyzed:	Apr-06-18	10:56			Apr-06-18 1	1:23	Apr-06-18	1:49			Apr-06-18 1	2:18
	Units/RL:	mg/kg	RL			mg/kg	RL	mg/kg	RL			mg/kg	RL
Gasoline Range Hydrocarbons (GRO)	· ·	<14.9	14.9			<15.0	15.0	<15.0	15.0			<15.0	15.0
Diesel Range Organics (DRO)		<14.9	14.9			<15.0	15.0	<15.0	15.0			<15.0	15.0
Oil Range Hydrocarbons (ORO)		<14.9	14.9			<15.0	15.0	<15.0	15.0			<15.0	15.0
Total TPH		<14.9	14.9			<15	15	<15	15			<15	15

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Huns Boah

Kelsey Brooks Project Manager



Certificate of Analysis Summary 581273

TRC Solutions, Inc, Midland, TX Project Name: GJ West Coop Unit #011



Date Received in Lab:Wed Apr-04-18 10:48 amReport Date:11-APR-18Project Manager:Kelsey Brooks

	Lab Id:	581273-0	013	581273-0	14	581273-0	15	581273-0	016	581273-0	17	581273-01	18
	Field Id:	E @3'		E @9'		E @18'		E-2 @3	3'	E-2 @9	)'	E-2 @18	5'
Analysis Requested	Depth:	3- ft		9- ft		18- ft		3- ft		9- ft		18- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Mar-30-18	11:50	Mar-30-18	11:55	Mar-30-18 1	2:00	Mar-30-18	12:05	Mar-30-18	12:10	Mar-30-18 1	2:15
BTEX by EPA 8021B	Extracted:	Apr-05-18	16:30					Apr-05-18	16:30				
	Analyzed:	Apr-06-18 (	04:02					Apr-06-18 (	04:19				
	Units/RL:	mg/kg	RL					mg/kg	RL				
Benzene		< 0.00202	0.00202					< 0.00198	0.00198				
Toluene		< 0.00202	0.00202					< 0.00198	0.00198				
Ethylbenzene		< 0.00202	0.00202					< 0.00198	0.00198				
m,p-Xylenes		< 0.00404	0.00404					< 0.00397	0.00397				
o-Xylene		< 0.00202	0.00202					< 0.00198	0.00198				
Total Xylenes		< 0.00202	0.00202					< 0.00198	0.00198				
Total BTEX		< 0.00202	0.00202					< 0.00198	0.00198				
Chloride by EPA 300	Extracted:	Apr-05-18	17:00	Apr-06-18 (	)8:55	Apr-06-18 0	8:55	Apr-06-18 (	08:55	Apr-06-18 (	)8:55	Apr-06-18 0	8:55
	Analyzed:	Apr-06-18 (	00:57	Apr-06-18 1	0:27	Apr-06-18 1	0:43	Apr-06-18	10:48	Apr-06-18 1	0:53	Apr-06-18 1	0:59
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		214	4.99	84.1	4.93	36.0	4.95	82.7	5.00	54.6	4.99	23.8	4.96
TPH by SW8015 Mod	Extracted:	Apr-06-18 (	06:00			Apr-06-18 0	6:00	Apr-06-18 (	06:00			Apr-06-18 0	6:00
	Analyzed:	Apr-06-18	12:48			Apr-06-18 1	3:17	Apr-06-18	14:41			Apr-06-18 1	5:08
	Units/RL:	mg/kg	RL			mg/kg	RL	mg/kg	RL			mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0			<14.9	14.9	<15.0	15.0			<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0			<14.9	14.9	<15.0	15.0			<15.0	15.0
Oil Range Hydrocarbons (ORO)		<15.0	15.0			<14.9	14.9	<15.0	15.0			<15.0	15.0
Total TPH		<15	15			<14.9	14.9	<15	15			<15	15

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Huns Boah

Kelsey Brooks Project Manager



Certificate of Analysis Summary 581273

TRC Solutions, Inc, Midland, TX Project Name: GJ West Coop Unit #011



Date Received in Lab:Wed Apr-04-18 10:48 amReport Date:11-APR-18Project Manager:Kelsey Brooks

	Lab Id:	581273-0	)19	581273-0	20	581273-02	21	581273-0	)22	581273-0	23	581273-02	24
Analysis Requested	Field Id:	W @3		W @6'		W @18		W-2 @SUR	FACE'	W-2 @2	2'	W-2 @8	
Analysis Kequestea	Depth:	3- ft		6- ft		18- ft		0-3 ft		2- ft		8- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Mar-30-18	12:20	Mar-30-18 1	2:25	Mar-30-18 1	2:30	Mar-30-18	12:35	Mar-30-18	12:40	Mar-30-18 1	2:45
BTEX by EPA 8021B	Extracted:	Apr-05-18	16:30					Apr-05-18	16:30				
	Analyzed:	Apr-06-18	04:38					Apr-06-18	04:58				
	Units/RL:	mg/kg	RL					mg/kg	RL				
Benzene	·	< 0.00200	0.00200					< 0.00202	0.00202				
Toluene		< 0.00200	0.00200					< 0.00202	0.00202				
Ethylbenzene		< 0.00200	0.00200					< 0.00202	0.00202				
m,p-Xylenes		< 0.00399	0.00399					< 0.00403	0.00403				
o-Xylene		< 0.00200	0.00200					< 0.00202	0.00202				
Total Xylenes		< 0.002	0.002					< 0.00202	0.00202				
Total BTEX		< 0.002	0.002					< 0.00202	0.00202				
Chloride by EPA 300	Extracted:	Apr-06-18	08:55	Apr-06-18 0	8:55	Apr-06-18 0	8:55	Apr-06-18	08:55	Apr-06-18 (	08:55	Apr-06-18 0	8:55
	Analyzed:	Apr-06-18	14:33	Apr-06-18 1	4:38	Apr-06-18 1	4:43	Apr-06-18	14:48	Apr-06-18 1	4:54	Apr-06-18 1	4:59
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		78.7	4.99	245	4.95	73.4	4.92	253	4.99	9.55	4.97	<4.95	4.95
TPH by SW8015 Mod	Extracted:	Apr-06-18	06:00			Apr-06-18 0	6:00	Apr-06-18	06:00			Apr-06-18 0	6:00
	Analyzed:	Apr-06-18	15:35			Apr-06-18 1	6:01	Apr-06-18	16:27			Apr-06-18 1	6:52
	Units/RL:	mg/kg	RL			mg/kg	RL	mg/kg	RL			mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0			<15.0	15.0	<15.0	15.0			<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0			<15.0	15.0	<15.0	15.0			<15.0	15.0
Oil Range Hydrocarbons (ORO)		<15.0	15.0			<15.0	15.0	<15.0	15.0			<15.0	15.0
Total TPH		<15	15			<15	15	<15	15			<15	15

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Huns Boah

Kelsey Brooks Project Manager



Certificate of Analysis Summary 581273

TRC Solutions, Inc, Midland, TX Project Name: GJ West Coop Unit #011



Date Received in Lab:Wed Apr-04-18 10:48 amReport Date:11-APR-18Project Manager:Kelsey Brooks

	T - L T L	591072 0	25	591072.0	26	591272 0	27	591072 0	20	591072.0	20	591072.02	20
	Lab Id:	581273-0	-	581273-0	20	581273-02	21	581273-0	-	581273-0	-	581273-03	
Analysis Requested	Field Id:	S@SURFA	ACE	S@2'		S@8'		DT-1@3	3'	DT-1@	6'	DT-1@18	3'
Analysis Requested	Depth:	0-3 ft		2- ft		8- ft		3- ft		6- ft		18- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-02-18	10:00	Apr-02-18 1	0:05	Apr-02-18 1	0:10	Apr-02-18	11:00	Apr-02-18	11:05	Apr-02-18 1	1:10
BTEX by EPA 8021B	Extracted:	Apr-05-18	16:30					Apr-06-18 (	)9:30				
	Analyzed:	Apr-06-18	05:17					Apr-06-18	11:39				
	Units/RL:	mg/kg	RL					mg/kg	RL				
Benzene		< 0.00201	0.00201					< 0.00200	0.00200				
Toluene		< 0.00201	0.00201					< 0.00200	0.00200				
Ethylbenzene		< 0.00201	0.00201					< 0.00200	0.00200				
m,p-Xylenes		< 0.00402	0.00402					< 0.00399	0.00399				
o-Xylene		< 0.00201	0.00201					< 0.00200	0.00200				
Total Xylenes		< 0.00201	0.00201					< 0.002	0.002				
Total BTEX		< 0.00201	0.00201					< 0.002	0.002				
Chloride by EPA 300	Extracted:	Apr-06-18	08:55	Apr-06-18 0	8:55	Apr-06-18 0	8:55	Apr-06-18 (	08:55	Apr-06-18 (	)8:55	Apr-06-18 08	8:55
	Analyzed:	Apr-06-18	15:15	Apr-06-18 1	5:20	Apr-06-18 1	5:44	Apr-06-18	15:49	Apr-06-18	15:54	Apr-06-18 10	5:00
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1840	25.0	34.4	4.95	11.8	5.00	2900	25.0	101	4.90	124	4.90
TPH by SW8015 Mod	Extracted:	Apr-06-18	06:00			Apr-06-18 0	6:00	Apr-06-18 (	)6:00			Apr-05-18 12	2:00
	Analyzed:	Apr-06-18	17:18			Apr-06-18 1	7:46	Apr-06-18	18:11			Apr-05-18 17	7:18
	Units/RL:	mg/kg	RL			mg/kg	RL	mg/kg	RL			mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0			<14.9	14.9	<15.0	15.0			<14.9	14.9
Diesel Range Organics (DRO)		36.3	15.0			<14.9	14.9	<15.0	15.0			<14.9	14.9
Oil Range Hydrocarbons (ORO)		<15.0	15.0			<14.9	14.9	<15.0	15.0			<14.9	14.9
Total TPH		36.3	15			<14.9	14.9	<15	15			<14.9	14.9

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Kelsey Brooks Project Manager



Certificate of Analysis Summary 581273

TRC Solutions, Inc, Midland, TX Project Name: GJ West Coop Unit #011



Date Received in Lab:Wed Apr-04-18 10:48 amReport Date:11-APR-18Project Manager:Kelsey Brooks

	Lab Id:	581273-0	031	581273-0	32	581273-0	33	581273-	034	581273-0	35	581273-03	36
	Field Id:	DT-2@SUR	FACE	DT-2@4	Ľ	DT-2@8	3'	DT-3@SUR	FACE	DT-3@4	4'	DT-3@8	)' )
Analysis Requested	Depth:	0-3 ft		2- ft		8- ft		0-3 ft		4- ft		8- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL	,	SOIL		SOIL	
	Sampled:	Apr-02-18	11:15	Apr-02-18 1	1:20	Apr-02-18 1	1:25	Apr-02-18	11:30	Apr-02-18	11:35	Apr-02-18 1	1:40
BTEX by EPA 8021B	Extracted:	Apr-06-18	09:30					Apr-06-18	09:30				
	Analyzed:	Apr-06-18	11:20					Apr-06-18	14:13				
	Units/RL:	mg/kg	RL					mg/kg	RL				
Benzene		< 0.00200	0.00200					< 0.00198	0.00198				
Toluene		< 0.00200	0.00200					< 0.00198	0.00198				
Ethylbenzene		< 0.00200	0.00200					< 0.00198	0.00198				
m,p-Xylenes		< 0.00401	0.00401					< 0.00397	0.00397				
o-Xylene		< 0.00200	0.00200					< 0.00198	0.00198				
Total Xylenes		< 0.002	0.002					< 0.00198	0.00198				
Total BTEX		< 0.002	0.002					< 0.00198	0.00198				
Chloride by EPA 300	Extracted:	Apr-06-18	08:55	Apr-06-18 0	8:55	Apr-06-18 0	8:55	Apr-06-18	09:30	Apr-06-18 (	)9:30	Apr-06-18 0	9:30
	Analyzed:	Apr-06-18	16:05	Apr-06-18 1	6:10	Apr-06-18 1	6:16	Apr-06-18	12:44	Apr-06-18 1	1:41	Apr-06-18 12	2:50
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		53100	245	16.4	4.98	19.4	4.97	15600	250	7.10	4.94	7.30	4.97
TPH by SW8015 Mod	Extracted:	Apr-05-18	12:00			Apr-05-18 1	2:00	Apr-05-18	12:00			Apr-05-18 1	2:00
	Analyzed:	Apr-05-18	17:39			Apr-05-18 1	8:02	Apr-06-18	05:26			Apr-06-18 0	5:46
	Units/RL:	mg/kg	RL			mg/kg	RL	mg/kg	RL			mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0			<14.9	14.9	<15.0	15.0			<15.0	15.0
Diesel Range Organics (DRO)		26.1	15.0			<14.9	14.9	46.2	15.0			<15.0	15.0
Oil Range Hydrocarbons (ORO)		<15.0	15.0			<14.9	14.9	19.9	15.0			<15.0	15.0
Total TPH		26.1	15			<14.9	14.9	66.1	15			<15	15

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Huns Boah

Kelsey Brooks Project Manager



## **Flagging Criteria**



- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- **E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- **F** RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- **H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- **K** Sample analyzed outside of recommended hold time.
- **JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- \*\* Surrogate recovered outside laboratory control limit.
- **BRL** Below Reporting Limit.
- RL Reporting Limit
- MDL Method Detection LimitSDLSample Detection LimitLOD Limit of Detection
- PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation
- DL Method Detection Limit
- NC Non-Calculable

SMP Clie	ent Sample	BLK	Method Blank	
BKS/LCS	Blank Spike/Laboratory Control Sample	BKSD/LCSD	Blank Spike Duplicate/Labor	ratory Control Sample Duplicate
MD/SD	Method Duplicate/Sample Duplicate	MS	Matrix Spike	MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

\* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



# Project Name: GJ West Coop Unit #011

	r <b>ders :</b> 581273 #: 3045830	3, Sample: 581273-030 / SMP	Batch	Project ID						
Units:	mg/kg	Date Analyzed: 04/05/18 17:18	SURROGATE RECOVERY STUDY							
	TPH b	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
		Analytes			[D]					
1-Chlorooct	tane		96.7	99.6	97	70-135				
o-Terpheny	1		50.0	49.8	100	70-135				
Lab Batch	#: 3045830	Sample: 581273-031 / SMP	Batch: 1 Matrix: Soil							
Units:	mg/kg	Date Analyzed: 04/05/18 17:39	SURROGATE RECOVERY STUDY							
	TPH by SW8015 Mod Analytes			True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1.011		Analytes				50.105				
1-Chlorooct			98.0	99.7	98	70-135				
o-Terpheny		G	50.1	49.9	100	70-135				
	atch #: 3045830 Sample: 581273-033 / SMP Batch: 1 Matrix: Soil									
Units:	mg/kg	Date Analyzed: 04/05/18 18:02	SU	RROGATE F	RECOVERYS	STUDY				
TPH by SW8015 Mod			Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes					[D]					
1-Chlorooct	tane		95.6	99.6	96	70-135				
o-Terpheny	1		50.0	49.8	100	70-135				
Lab Batch	#: 3046139	Sample: 581273-001 / SMP	Batch	n: 1 Matrix	<b>k:</b> Soil					
Units:	mg/kg	Date Analyzed: 04/06/18 02:46	SU	RROGATE F	RECOVERY	STUDY				
		A by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluor		Analytes	0.0275	0.0300		70.120				
4-Bromoflu			0.0275	0.0300	92	70-130				
	#: 3046139	Sample: 581273-004 / SMP	Batch			/0-150				
Units:	mg/kg	Date Analyzed: 04/06/18 03:05		RROGATE F		STUDY				
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
140'0		Analytes	0.0202	0.0200		70.120				
1,4-Difluor			0.0308	0.0300	103	70-130				
4-Bromoflu	orobenzene		0.0292	0.0300	97	70-130				

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



# Project Name: GJ West Coop Unit #011

	rders: 58127 #: 3046139	Batch:	Project ID 1 Matrix							
Units:	mg/kg	Date Analyzed: 04/06/18 03:24	SURROGATE RECOVERY STUDY							
	ВТЕХ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
		Analytes			[D]					
1,4-Difluor	obenzene		0.0296	0.0300	99	70-130				
4-Bromoflu	orobenzene		0.0297	0.0300	99	70-130				
Lab Batch	<b>#:</b> 3046139	Sample: 581273-010 / SMP	P Batch: 1 Matrix: Soil							
Units:	mg/kg	Date Analyzed: 04/06/18 03:43	SURROGATE RECOVERY STUDY							
	BTEX by EPA 8021B Analytes			True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
140.0	1	Analytes								
1,4-Difluor			0.0281	0.0300	94	70-130				
	orobenzene	G L 591272 012 / SMD	0.0296	0.0300	99	70-130				
	#: 3046139	Sample: 581273-013 / SMP	Batch:     1     Matrix: Soil       SURROGATE     RECOVERY STUDY							
Units:	mg/kg	Date Analyzed: 04/06/18 04:02	SUR	STUDY						
BTEX by EPA 8021B			Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
	Analytes				[D]					
1,4-Difluor	obenzene		0.0278	0.0300	93	70-130				
4-Bromoflu	orobenzene		0.0277	0.0300	92	70-130				
Lab Batch	#: 3046139	Sample: 581273-016 / SMP	Batch:	1 Matrix	<b>k:</b> Soil					
Units:	mg/kg	Date Analyzed: 04/06/18 04:19	SUR	ROGATE R	RECOVERYS	STUDY				
	ВТЕХ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluor	obenzene		0.0283	0.0300	94	70-130				
4-Bromoflu			0.0283	0.0300	101	70-130				
	#: 3046139	Sample: 581273-019 / SMP	Batch:			,0150				
Units:	mg/kg	<b>Date Analyzed:</b> 04/06/18 04:38			RECOVERY	STUDY				
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
Analytes										
1,4-Difluor	obenzene		0.0301	0.0300	100	70-130				

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



# Project Name: GJ West Coop Unit #011

	<b>ders :</b> 581273 #: 3046139	3, Sample: 581273-022 / SMP	Batc	Project ID					
Units:	mg/kg	Date Analyzed: 04/06/18 04:58	SURROGATE RECOVERY STUDY						
		by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes			[D]				
1,4-Difluoro	benzene		0.0295	0.0300	98	70-130			
4-Bromoflue			0.0289	0.0300	96	70-130			
Lab Batch	#: 3046139	Sample: 581273-025 / SMP	Bate	h: 1 Matri	<b>x:</b> Soil				
Units:	mg/kg	Date Analyzed: 04/06/18 05:17	SU	RROGATE I	RECOVERYS	STUDY			
	BTEX by EPA 8021B Analytes			True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1 4 D'flees		Analytes	0.0205	0.0200		70.120			
1,4-Difluoro			0.0285	0.0300	95	70-130			
		Same 591272 024 / SMD	0.0283	0.0300	94	70-130			
	#: 3045830	Sample: 581273-034 / SMP	Batc						
Units:	mg/kg	<b>Date Analyzed:</b> 04/06/18 05:26	SU	RROGATE I	RECOVERYS	STUDY			
TPH by SW8015 Mod			Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes				[D]				
1-Chlorooct	ane		100	99.8	100	70-135			
o-Terphenyl			51.4	49.9	103	70-135			
Lab Batch	#: 3045830	Sample: 581273-036 / SMP	Bate	h: 1 Matri	<b>x:</b> Soil	1			
Units:	mg/kg	Date Analyzed: 04/06/18 05:46	SURROGATE RECOVERY STUDY						
		oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes			[D]				
1-Chlorooct			97.5	99.7	98	70-135			
o-Terphenyl			50.8	49.9	102	70-135			
	#: 3046079	Sample: 581273-001 / SMP	Batc						
Units:	mg/kg	Date Analyzed: 04/06/18 08:20	SU	RROGATE H	RECOVERY	STUDY			
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flage			
		Analytes			[D]				
1-Chlorooct			99.6	99.9	100	70-135			
o-Terphenyl			51.0	50.0	102	70-135			

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



# Project Name: GJ West Coop Unit #011

Amount Found [A] 95.1 48.5 Batch SU Amount Found [A] 97.7 48.3 Batch	RROGATE R True Amount [B] 99.8 49.9	Recovery %R [D]           95           97           :: Soil           Recovery %R [D]           98           97           :: Soil	Control Limits %R 70-135 70-135 STUDY Control Limits %R 70-135 70-135	Flags		
Found [A] 95.1 48.5 Batch SU. Amount [A] 97.7 48.3 Batch SU. Amount Found [A]	Amount [B] 99.7 49.9 1: 1 Matrix RROGATE R Amount [B] 99.8 49.9 1: 1 Matrix RROGATE R Amount [B]	%R         [D]           95         97           Soil         8           Recovery         %R           [D]         98           97         98           97         Soil           ECOVERY S         8           98         97           Soil         8           98         97           %R         98           97         %R	Limits %R 70-135 70-135 STUDY Control Limits %R 70-135 70-135 STUDY STUDY Control Limits	Flags		
48.5 Batch SU: Amount Found [A] 97.7 48.3 Batch SU: Amount Found [A]	49.9 n: 1 Matrix RROGATE R Amount [B] 99.8 49.9 n: 1 Matrix RROGATE R Amount [B]	95           97           :: Soil           Recovery           %R           [D]           98           97           :: Soil           Recovery           %R           [D]           98           97           :: Soil           Recovery %R           %R	70-135 STUDY Control Limits %R 70-135 70-135 STUDY Control Limits			
48.5 Batch SU: Amount Found [A] 97.7 48.3 Batch SU: Amount Found [A]	49.9 n: 1 Matrix RROGATE R Amount [B] 99.8 49.9 n: 1 Matrix RROGATE R Amount [B]	97 :: Soil RECOVERY S %R [D] 98 97 :: Soil RECOVERY S Recovery %R	70-135 STUDY Control Limits %R 70-135 70-135 STUDY Control Limits			
Batch SU. Amount [A] 97.7 48.3 Batch SU. Amount Found [A]	n: 1 Matrix RROGATE R True Amount [B] 99.8 49.9 n: 1 Matrix RROGATE R Amount [B]	Recovery %R [D] 98 97 C Soil COVERY S Recovery %R	STUDY Control Limits %R 70-135 70-135 70-135 STUDY Control Limits			
SU Amount Found [A] 97.7 48.3 Batch SU Amount Found [A]	RROGATE R True Amount [B] 99.8 49.9 n: 1 Matrix RROGATE R Amount [B]	Recovery % (D) 98 97 Soil Recovery % Recovery % Recovery %	Control Limits %R 70-135 70-135 70-135 STUDY Control Limits			
Amount Found [A] 97.7 48.3 Batch SU Amount Found [A]	True Amount [B] 99.8 49.9 n: 1 Matrix RROGATE R Amount [B]	Recovery %R [D] 98 97 :: Soil ECOVERY S Recovery %R	Control Limits %R 70-135 70-135 70-135 STUDY Control Limits			
Found [A] 97.7 48.3 Batch SU Amount Found [A]	Amount [B] 99.8 49.9 n: 1 Matrix RROGATE R True Amount [B]	%R [D] 98 97 :: Soil ECOVERY S Recovery %R	Limits %R 70-135 70-135 STUDY Control Limits			
48.3 Batch SU: Amount Found [A]	49.9 n: 1 Matrix RROGATE R True Amount [B]	98 97 Sc: Soil RECOVERY S Recovery %R	70-135 STUDY Control Limits	Flags		
48.3 Batch SU: Amount Found [A]	49.9 n: 1 Matrix RROGATE R True Amount [B]	97 Soil RECOVERY S Recovery %R	70-135 STUDY Control Limits	Flags		
Batch SU Amount Found [A]	n: 1 Matrix RROGATE R True Amount [B]	ECOVERY S Recovery %R	STUDY Control Limits	Flags		
SU Amount Found [A]	RROGATE R True Amount [B]	Recovery %R	Control Limits	Flags		
Amount Found [A]	True Amount [B]	Recovery %R	Control Limits	Flags		
Found [A]	Amount [B]	%R	Limits	Flags		
99.3	99.8	[D]				
99.3	99.8					
	1	99	70-135			
50.2	49.9	101	70-135			
Batch	n: 1 Matrix	: Soil				
SURROGATE RECOVERY STUDY						
Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
98.6	99.6	99	70-135			
48.3	49.8	97	70-135			
SU.	RROGATE R	ECOVERY S	STUDY			
Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
			-			
	0.0300	100	70-130			
	SU Amount Found	SURROGATE R Amount True Found Amount [A] [B]	SURROGATE RECOVERY S Amount True Found Amount [A] [B] %R [D]	SURROGATERECOVERY STUDYAmountTrue AmountControl Limits[A][B]%R [D]		

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



## Project Name: GJ West Coop Unit #011

		2000	h: 1 Matrix	: Soil				
mg/kg	Date Analyzed: 04/06/18 11:23	SU	RROGATE R	ECOVERY S	STUDY			
TPH b	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes			[D]				
ne		97.1	99.7	97	70-135			
		49.1	49.9	98	70-135			
: 3046056	Sample: 581273-028 / SMP	Batc	h: 1 Matrix	: Soil				
mg/kg	Date Analyzed: 04/06/18 11:39	SU	RROGATE R	ECOVERY S	STUDY			
		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
	Anarytes	0.0284	0.0300		70.130			
	Sample: 581273-010 / SMP				70-150			
					STUDY			
TPH b	oy SW8015 Mod	Amount Found	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes	[]	[17]	[D]				
ne		96.3	99.9	96	70-135			
		47.0	50.0	94	70-135			
: 3046079	Sample: 581273-012 / SMP	Batc	h: 1 Matrix	: Soil				
mg/kg	Date Analyzed: 04/06/18 12:18	SURROGATE RECOVERY STUDY						
	•	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes							
ne								
- 2046070	Complet 591072 012 / CMD				70-135			
	•							
mg/kg	Date Analyzeu: 04/00/18 12:48	st	KROGATE R	ECOVERY S	STUDY			
		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Anarytes	02.1	00.7		70.125			
		93.1	99.7	95	/0-135			
	TPH b ne #: 3046056 mg/kg BTEX Denzene #: 3046079 mg/kg TPH b ne #: 3046079 mg/kg TPH b	TPH by SW8015 Mod       Analytes         ne	TPH by SW8015 Mod     Amount Found [A]       Analytes     97.1       ne     97.1       49.1     49.1       f: 3046056     Sample: 581273-028 / SMP       mg/kg     Date Analyzed: 04/06/18 11:39       BTEX by EPA 8021B     Amount Found [A]       Analytes     0.0284       senzene     0.0284       robenzene     0.0284       f: 3046079     Sample: 581273-010 / SMP       mg/kg     Date Analyzed: 04/06/18 11:49       SU     TPH by SW8015 Mod       Analytes     47.0       f: 3046079     Sample: 581273-012 / SMP       me     96.3       47.0     47.0       f: 3046079     Sample: 581273-012 / SMP       mg/kg     Date Analyzed: 04/06/18 12:18       res     97.7       if: 3046079     Sample: 581273-012 / SMP       mg/kg     Date Analyzed: 04/06/18 12:18       TPH by SW8015 Mod     Amount Found [A]       maintytes     97.7       mg/kg     Date Analyzed: 04/06/18 12:18       TPH by SW8015 Mod     Amount Found [A]       malytes     97.7       f: 3046079     Sample: 581273-013 / SMP       me     97.7       f: 3046079     Sample: 581273-013 / SMP       me     97.7 <td< td=""><td>TPH by SW8015 Mod     Amount Found [A]     True Amount [B]       Analytes     97.1     99.7       ne     97.1     49.7       49.1     49.9       49.1     49.9       49.1     49.9       49.1     49.9       mg/kg     Date Analyzed: 04/06/18 11:39     SURROGATE R       BTEX by EPA 8021B     Amount Found [A]     Amount Found [A]     True Manount [B]       Analytes     0.0284     0.0300       robenzene     0.0284     0.0300       robenzene     0.0284     0.0300       robenzene     0.0284     0.0300       robenzene     0.0284     0.0300       g/kg     Date Analyzed: 04/06/18 11:49     SURROGATE R       TPH by SW8015 Mod     Amount Found [A]     True Amount Found [A]       ne     96.3     99.9       47.0     50.0       47.0     50.0       47.0     50.0       47.1     49.9       mg/kg     Date Analyzed: 04/06/18 12:18       TPH by SW8015 Mod     Amount [A]     True Amount [B]       ne     97.7     99.7       47.0     50.0     47.0       mg/kg     Date Analyzed: 04/06/18 12:18     SURROGATE R       TPH by SW8015 Mod     Amount [A]     I</td><td>TPH by SW8015 Mod     Amount Found     True (A)     True (B)     Recovery %A (D)       ne     97.1     99.7     97       49.1     49.9     98       f: 3046056     Sample: 581273-028 / SMP     Batch:     1     Matrix: Soil       mg/kg     Date Analyzed:     04/06/18 11:39     SURROGATE RECOVERY S       BTEX by EPA 8021B     Amount (A)     True Amount (B)     Recovery %0 (D)       benzene     0.0284     0.0300     95       robenzene     0.0284     0.0300     95       robenzene     0.0284     0.0300     95       g/kg     Date Analyzed:     04/06/18 11:49     SURROGATE RECOVERY S       TPH by SW8015 Mod     Amount (A)     True Analytes     Recovery %0 (D)       ne     96.3     99.9     96       47.0     50.0     94       52     SurROGATE RECOVERY S       TPH by SW8015 Mod     Amount (A)     SureCoATE RECOVERY S       mg/kg     Date Analyzed:     04/06/18 12:18     SURROGATE RECOVERY S       TPH by SW8015 Mod     Amount (A)     True Amount (B)     Recovery %0 (D)       ne     97.7     99.7     98       47.7     49.9     96       47.7     49.9     96       47.7     49.9</td><td>TPH by SW8015 Mod         Amount Found [A]         True Amount [B]         True Amount [B]         Control Becovery [D]         Control Limits %R           ne         97.1         99.7         97         70-135           49.1         49.9         98         70-135           #         3046056         Sample: 581273-028 / SMP         Batch: 1         Matrix: Soil           mg/kg         Date Analyzed: 04/06/18 11:39         SURROGATE RECOVERY STUDY           BTEX by EPA 8021B         Amount [B]         True Amount [B]         Recovery %R         Control 10           Analytes         0.0284         0.0300         95         70-130           Senzene         0.0284         0.0300         95         70-130           robenzene         0.0284         0.0300         95         70-130           gr/kg         Date Analyzed: 04/06/18 11:49         SURROGATE RECOVERY STUDY           TPH by SW8015 Mod         Amount Found [A]         True Amount [B]         Recovery %R         Control 10           mg/kg         Date Analyzed: 04/06/18 12:18         SURROGATE RECOVERY STUDY           TPH by SW8015 Mod         Amount Found [A]         True Amount Found [A]         Recovery %R         Control 10           mg/kg         Date Analyzed: 04/06/18 12:18</td></td<>	TPH by SW8015 Mod     Amount Found [A]     True Amount [B]       Analytes     97.1     99.7       ne     97.1     49.7       49.1     49.9       49.1     49.9       49.1     49.9       49.1     49.9       mg/kg     Date Analyzed: 04/06/18 11:39     SURROGATE R       BTEX by EPA 8021B     Amount Found [A]     Amount Found [A]     True Manount [B]       Analytes     0.0284     0.0300       robenzene     0.0284     0.0300       robenzene     0.0284     0.0300       robenzene     0.0284     0.0300       robenzene     0.0284     0.0300       g/kg     Date Analyzed: 04/06/18 11:49     SURROGATE R       TPH by SW8015 Mod     Amount Found [A]     True Amount Found [A]       ne     96.3     99.9       47.0     50.0       47.0     50.0       47.0     50.0       47.1     49.9       mg/kg     Date Analyzed: 04/06/18 12:18       TPH by SW8015 Mod     Amount [A]     True Amount [B]       ne     97.7     99.7       47.0     50.0     47.0       mg/kg     Date Analyzed: 04/06/18 12:18     SURROGATE R       TPH by SW8015 Mod     Amount [A]     I	TPH by SW8015 Mod     Amount Found     True (A)     True (B)     Recovery %A (D)       ne     97.1     99.7     97       49.1     49.9     98       f: 3046056     Sample: 581273-028 / SMP     Batch:     1     Matrix: Soil       mg/kg     Date Analyzed:     04/06/18 11:39     SURROGATE RECOVERY S       BTEX by EPA 8021B     Amount (A)     True Amount (B)     Recovery %0 (D)       benzene     0.0284     0.0300     95       robenzene     0.0284     0.0300     95       robenzene     0.0284     0.0300     95       g/kg     Date Analyzed:     04/06/18 11:49     SURROGATE RECOVERY S       TPH by SW8015 Mod     Amount (A)     True Analytes     Recovery %0 (D)       ne     96.3     99.9     96       47.0     50.0     94       52     SurROGATE RECOVERY S       TPH by SW8015 Mod     Amount (A)     SureCoATE RECOVERY S       mg/kg     Date Analyzed:     04/06/18 12:18     SURROGATE RECOVERY S       TPH by SW8015 Mod     Amount (A)     True Amount (B)     Recovery %0 (D)       ne     97.7     99.7     98       47.7     49.9     96       47.7     49.9     96       47.7     49.9	TPH by SW8015 Mod         Amount Found [A]         True Amount [B]         True Amount [B]         Control Becovery [D]         Control Limits %R           ne         97.1         99.7         97         70-135           49.1         49.9         98         70-135           #         3046056         Sample: 581273-028 / SMP         Batch: 1         Matrix: Soil           mg/kg         Date Analyzed: 04/06/18 11:39         SURROGATE RECOVERY STUDY           BTEX by EPA 8021B         Amount [B]         True Amount [B]         Recovery %R         Control 10           Analytes         0.0284         0.0300         95         70-130           Senzene         0.0284         0.0300         95         70-130           robenzene         0.0284         0.0300         95         70-130           gr/kg         Date Analyzed: 04/06/18 11:49         SURROGATE RECOVERY STUDY           TPH by SW8015 Mod         Amount Found [A]         True Amount [B]         Recovery %R         Control 10           mg/kg         Date Analyzed: 04/06/18 12:18         SURROGATE RECOVERY STUDY           TPH by SW8015 Mod         Amount Found [A]         True Amount Found [A]         Recovery %R         Control 10           mg/kg         Date Analyzed: 04/06/18 12:18		

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



# Project Name: GJ West Coop Unit #011

Work Ore Lab Batch #	<b>ders :</b> 581273 #: 3046079	3, Sample: 581273-015 / SMP	Batch	Project ID					
Units:	mg/kg	Date Analyzed: 04/06/18 13:17	SURROGATE RECOVERY STUDY						
	TPH b	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes			[D]				
1-Chloroocta	ine		93.0	99.6	93	70-135			
o-Terphenyl			47.5	49.8	95	70-135			
Lab Batch #	<b>#:</b> 3046056	Sample: 581273-034 / SMP	Batch	n: 1 Matrix	: Soil	·			
Units:	mg/kg	Date Analyzed: 04/06/18 14:13	SU	RROGATE F	RECOVERY	STUDY			
		X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorol		Analytes	0.0290	0.0300	97	70-130			
4-Bromofluo			0.0290						
Lab Batch #		Sample: 581273-016 / SMP	Batch	0.0300 n: 1 Matrix	104 	70-130			
		-	Batch: 1 Matrix: Soil SURROGATE RECOVERY STUDY						
Units:	mg/kg	Date Analyzed: 04/06/18 14:41	SU	RROGATE F	RECOVERY	STUDY			
TPH by SW8015 Mod			Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[**]	[2]	[D]	/011			
1-Chloroocta	ine		93.8	99.9	94	70-135			
o-Terphenyl			45.3	50.0	91	70-135			
Lab Batch #	#: 3046079	Sample: 581273-018 / SMP	Batch	n: 1 Matrix	: Soil	1			
Units:	mg/kg	Date Analyzed: 04/06/18 15:08	SU	RROGATE F	RECOVERY	STUDY			
		oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes			[D]				
1-Chloroocta	ine		93.3	100	93	70-135			
o-Terphenyl			46.0	50.0	92	70-135			
Lab Batch #	<b>#:</b> 3046079	Sample: 581273-019 / SMP	Batch	n: 1 Matrix	: Soil				
Units:	mg/kg	Date Analyzed: 04/06/18 15:35	SU	RROGATE F	RECOVERY	STUDY			
TPH by SW8015 Mod			Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
		Analytes							
1-Chloroocta	ine		94.8	99.8	95	70-135			
o-Terphenyl			47.3	49.9	95	70-135			

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



## Project Name: GJ West Coop Unit #011

Work Ord Lab Batch #:	ers: 581273 3046079	3, Sample: 581273-021 / SMP	Batcl	Project II h: 1 Matri	D: ix: Soil					
Units:	mg/kg	Date Analyzed: 04/06/18 16:01	SU	RROGATE	RECOVERYS	STUDY				
	TPH b	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
		Analytes			[D]					
1-Chlorooctan	e		97.9	99.8	98	70-135				
o-Terphenyl			48.7	49.9	98	70-135				
Lab Batch #:	3046079	Sample: 581273-022 / SMP	<b>Batch:</b> 1 Matrix: Soil							
Units:	mg/kg	Date Analyzed: 04/06/18 16:27	SU	RROGATE	RECOVERY S	STUDY				
		by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooctan		Analytes	102	00.7		70.105				
	e		102	99.7	102	70-135				
o-Terphenyl	2046070	Same La 591272 024 / SMD	51.6	49.9	103	70-135				
Lab Batch #: 3046079         Sample: 581273-024 / SMP         Batch: 1         Matrix: Soil										
Units:	mg/kg	Date Analyzed: 04/06/18 16:52	SU	<b>RROGATE</b>	RECOVERY S	STUDY				
TPH by SW8015 Mod			Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
		Analytes			[D]					
1-Chlorooctan	e		97.2	100	97	70-135				
o-Terphenyl			49.6	50.0	99	70-135				
Lab Batch #:	3046079	Sample: 581273-025 / SMP	Batcl	h: 1 Matri	ix: Soil					
Units:	mg/kg	Date Analyzed: 04/06/18 17:18	SU	RROGATE	RECOVERY	STUDY				
		oy SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooctan			98.1	99.9	98	70-135				
o-Terphenyl	-		49.0	50.0	98	70-135				
Lab Batch #:	3046079	Sample: 581273-027 / SMP	Batcl		ix: Soil	,0155				
Units:	mg/kg	Date Analyzed: 04/06/18 17:46			RECOVERY S	STUDY				
		oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
		Analytes			[D]					
1-Chlorooctan	e		94.4	99.6	95	70-135				
o-Terphenyl			46.9	49.8	94	70-135				

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



## Project Name: GJ West Coop Unit #011

	rders : 581273 #: 3046079	3, Sample: 581273-028 / SMP	Batch	Project ID 1: 1 Matrix					
Units:	mg/kg	Date Analyzed: 04/06/18 18:11	SURROGATE RECOVERY STUDY						
	TPH b	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes			[D]				
1-Chlorooc	tane		97.1	99.8	97	70-135			
o-Terpheny	n		48.3	49.9	97	70-135			
Lab Batch	#: 3045830	Sample: 7642101-1-BLK / B	BLK Batch	n: 1 Matrix	: Solid				
Units:	mg/kg	Date Analyzed: 04/05/18 13:09	SU	RROGATE R	ECOVERY S	STUDY			
		oy SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooc		Anaryus	92.7	100	93	70-135			
o-Terpheny			43.3	50.0	87	70-135			
	#: 3046139	Sample: 7642137-1-BLK / H			solid	70-155			
Lab Batch Units:	mg/kg	Date Analyzed: 04/05/18 22:16     SURROGATE RECOVERY ST							
	iiig/kg	Date Analyzed: 04/05/18 22.10	SU	RROGATE R	ECOVERY S	STUDY			
BTEX by EPA 8021B			Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes				[D]				
1,4-Difluor	obenzene		0.0282	0.0300	94	70-130			
4-Bromoflu	iorobenzene		0.0252	0.0300	84	70-130			
Lab Batch	#: 3046079	Sample: 7642256-1-BLK / H	BLK Batch	n: 1 Matrix	: Solid				
Units:	mg/kg	Date Analyzed: 04/06/18 07:04	SU	RROGATE R	ECOVERY S	STUDY			
TPH by SW8015 Mod Analytes			Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooc		Anaryus	102	100		70.125			
o-Terpheny			102 52.0	100 50.0	102	70-135			
	#: 3046056	Sample: 7642251-1-BLK / H			: Solid	70-135			
Units:	mg/kg	Date Analyzed: 04/06/18 11:00							
UIIII3.	mg/Kg	Date Analyzeu. 04/00/10 11.00	SU	RROGATE R	ECOVERY S				
		X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluor		Amarytes	0.0274	0.0200		70.120			
			0.0274	0.0300	91	70-130			
ч-ртошоци	iorobenzene		0.0268	0.0300	89	70-130			

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



Project Name: GJ West Coop Unit #011

	rders : 581273 #: 3045830	3, Sample: 7642101-1-BKS /	BKS Batcl	Project ID						
Units:	mg/kg	Date Analyzed: 04/05/18 13:31	SU	RROGATE R	ECOVERY S	STUDY				
	TPH b	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
		Analytes			[D]					
1-Chlorooct	tane		97.1	100	97	70-135				
o-Terpheny	1		48.5	50.0	97	70-135				
Lab Batch	#: 3046139	Sample: 7642137-1-BKS /	BKS Batcl	h: 1 Matrix	: Solid					
Units:	mg/kg	Date Analyzed: 04/05/18 20:21	SURROGATE RECOVERY STUDY							
	BTEX by EPA 8021B Analytes			True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
		Analytes								
1,4-Difluor			0.0299	0.0300	100	70-130				
4-Bromoflu			0.0257	0.0300	86	70-130				
	#: 3046079	Sample: 7642256-1-BKS /	BKS Batcl	h: 1 Matrix	: Solid					
Units:	mg/kg	Date Analyzed: 04/06/18 07:29	SU	RROGATE R	ECOVERY S	STUDY				
TPH by SW8015 Mod			Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
	Analytes			[2]	[D]	,				
1-Chlorooct	tane		112	100	112	70-135				
o-Terpheny	1		54.2	50.0	108	70-135				
Lab Batch	#: 3046056	Sample: 7642251-1-BKS /	BKS Batc	h: 1 Matrix	: Solid					
Units:	mg/kg	Date Analyzed: 04/06/18 09:05	SU	RROGATE R	ECOVERY S	STUDY				
		A by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluor		v	0.0306	0.0300	102	70-130				
4-Bromoflu			0.0287	0.0300	96	70-130				
	#: 3045830	Sample: 7642101-1-BSD /				1				
Units:	mg/kg	Date Analyzed: 04/05/18 13:52		RROGATE R		STUDY				
		oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1.011		Analytes								
1-Chlorooct			99.2	100	99	70-135				
o-Terpheny	1		49.3	50.0	99	70-135				

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



# Project Name: GJ West Coop Unit #011

	r <b>ders :</b> 581273 #: 3046139	3, Sample: 7642137-1-BSD / I	BSD Batcl	Project ID h: 1 Matrix						
Units:	mg/kg	Date Analyzed: 04/05/18 20:40	SURROGATE RECOVERY STUDY							
		K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
		Analytes			[D]					
1,4-Difluor			0.0294	0.0300	98	70-130				
4-Bromoflu			0.0254 0.0300 85 70-130							
Lab Batch	#: 3046079	Sample: 7642256-1-BSD / 1	D/BSD Batch: 1 Matrix: Solid							
Units:	mg/kg	Date Analyzed: 04/06/18 07:54	SU	RROGATE R	ECOVERY S	STUDY				
	TPH by SW8015 Mod Analytes			True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooc		Analytes	122	100		70.125				
			123	100	123	70-135				
o-Terpheny		Samely 7(40051-1 DSD / 1	60.5	50.0	121	70-135				
	#: 3046056	Sample: 7642251-1-BSD / 1								
Units: mg/kg Date Analyzed: 04/06/18 09:24 SURROGATE RECOV					ECOVERY S	STUDY				
BTEX by EPA 8021B			Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes					[D]		I			
1,4-Difluor	1,4-Difluorobenzene			0.0300	108	70-130				
4-Bromoflu	orobenzene		0.0295	0.0300	98	70-130				
Lab Batch	<b>#:</b> 3045830	Sample: 581096-005 S / MS	S Batcl	h: 1 Matrix	: Soil					
Units:	mg/kg	Date Analyzed: 04/05/18 15:36	SU	RROGATE R	ECOVERY S	STUDY				
		by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooc		Analytes	100	00.8		70-135				
o-Terpheny			109	99.8	109					
	#: 3046139	Sample: 581096-002 S / MS	53.5 5 Batcl			70-135				
Units:	mg/kg	<b>Date Analyzed:</b> 04/05/18 20:59								
omis:	mg/Kg	Date Milalyzeu: 04/05/16/20.59	SU	RROGATE R	ECOVERY S	STUDY				
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
	Analytes									
1,4-Difluor		Analytes	0.0324	0.0300	108	70-130				

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



# Form 2 - Surrogate Recoveries

# Project Name: GJ West Coop Unit #011

	<b>ders :</b> 58127: #: 3046079	3, Sample: 581273-001 S / MS	Batch:	Project ID 1 Matrix			
Units:	mg/kg	Date Analyzed: 04/06/18 08:46	SUR	ROGATE R	RECOVERY	STUDY	
		oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chlorooct	ane		109	99.8	109	70-135	
o-Terpheny	l		52.7	49.9	106	70-135	
Lab Batch	#: 3046056	Sample: 581273-031 S / MS	Batch:	1 Matrix	<b>k:</b> Soil		
Units:	mg/kg	Date Analyzed: 04/06/18 09:44	SUR	ROGATE R	RECOVERYS	STUDY	
		K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4 4 5 10		Analytes					
1,4-Difluoro			0.0288	0.0300	96	70-130	
4-Bromoflu			0.0312	0.0300	104	70-130	
	#: 3045830	Sample: 581096-005 SD / M	SD Batch:	1 Matrix	k: Soil		
Units:	mg/kg	Date Analyzed: 04/05/18 15:57	SUR	RROGATE R	RECOVERY	STUDY	
	TPH I	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chlorooct	ane		124	100	124	70-135	
o-Terpheny	l		47.7	50.0	95	70-135	
Lab Batch	#: 3046139	Sample: 581096-002 SD / M	SD Batch:	1 Matrix	<b>k:</b> Soil		
Units:	mg/kg	Date Analyzed: 04/05/18 21:18	SUR	ROGATE R	RECOVERYS	STUDY	
		K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4-Difluoro			0.0296	0.0300	99	70-130	
4-Bromoflu			0.0271	0.0300	90	70-130	
	#: 3046079	Sample: 581273-001 SD / M					
Units:	mg/kg	<b>Date Analyzed:</b> 04/06/18 09:11		ROGATE F	RECOVERYS	STUDY	
		oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chlorooct	ane		110	99.9	110	70-135	
o-Terpheny	l		53.4	50.0	107	70-135	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.



# Form 2 - Surrogate Recoveries

## Project Name: GJ West Coop Unit #011

Work Orders : 58 Lab Batch #: 3046056		MSD Batch	Project ID: n: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 04/06/18 10:03	SU	RROGATE RE	COVERY S	STUDY	
BT	EX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0308	0.0300	103	70-130	
4-Bromofluorobenzene		0.0318	0.0300	106	70-130	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.



## **BS / BSD Recoveries**



#### Project Name: GJ West Coop Unit #011

Work Order #: 581273							Proj	ect ID:			
Analyst: ALJ	D	ate Prepar	red: 04/05/20	18			Date A	nalyzed:	04/05/2018		
Lab Batch ID: 3046139 Sample: 7642137-1	-BKS	Batc	<b>h #:</b> 1					Matrix:	Solid		
Units: mg/kg		BLAN	K /BLANK	SPIKE / 1	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	DY	
BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00201	0.100	0.122	122	0.0998	0.115	115	6	70-130	35	
Toluene	< 0.00201	0.100	0.116	116	0.0998	0.109	109	6	70-130	35	
Ethylbenzene	< 0.00201	0.100	0.111	111	0.0998	0.104	104	7	70-130	35	
m,p-Xylenes	< 0.00402	0.201	0.229	114	0.200	0.213	107	7	70-130	35	
o-Xylene	< 0.00201	0.100	0.115	115	0.0998	0.107	107	7	70-130	35	
Analyst: ALJ	D	ate Prepar	ed: 04/06/20	18			Date A	nalyzed: (	04/06/2018		
Lab Batch ID: 3046056 Sample: 7642251-1	-BKS	Batc	<b>h #:</b> 1					Matrix:	Solid		
Units: mg/kg		BLAN	K /BLANK	SPIKE / ]	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	DY	
BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	< 0.00200	0.0998	0.120	120	0.100	0.122	122	2	70-130	35	
Toluene	< 0.00200	0.0998	0.114	114	0.100	0.116	116	2	70-130	35	
Ethylbenzene	< 0.00200	0.0998	0.112	112	0.100	0.112	112	0	70-130	35	
m,p-Xylenes	<0.00399	0.200	0.230	115	0.201	0.230	114	0	70-130	35	
o-Xylene	< 0.00200	0.0998	0.114	114	0.100	0.115	115	1	70-130	35	

Relative Percent Difference RPD =  $200^{*}|(C-F)/(C+F)|$ Blank Spike Recovery [D] =  $100^{*}(C)/[B]$ Blank Spike Duplicate Recovery [G] =  $100^{*}(F)/[E]$ All results are based on MDL and Validated for QC Purposes



## **BS / BSD Recoveries**



#### Project Name: GJ West Coop Unit #011

Work Order	: #: 581273							Pro	ject ID:			
Analyst:	OJS	D	ate Prepar	ed: 04/05/202	18			Date A	nalyzed: (	04/05/2018		
Lab Batch ID	: 3045902 Sample: 7642125	-1-BKS	Batcl	<b>h #:</b> 1					Matrix: S	Solid		
Units:	mg/kg		BLAN	K/BLANK	SPIKE / ]	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	DY	
Analy	Chloride by EPA 300 vtes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride		<5.00	250	252	101	250	242	97	4	90-110	20	
Analyst:	SCM	D	ate Prepar	ed: 04/06/20	18			Date A	nalyzed: (	04/06/2018		
Lab Batch ID	: 3045932 Sample: 7642190-	-1-BKS	Batcl	<b>h #:</b> 1					Matrix: S	Solid		
Units:	mg/kg		BLAN	K/BLANK	SPIKE / ]	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	DY	
Analy	Chloride by EPA 300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride		<5.00	250	275	110	250	273	109	1	90-110	20	
Analyst:	OJS	D	ate Prepar	ed: 04/06/20	18	1	1	Date A	nalyzed: (	)4/06/2018	1	·
Lab Batch ID	<b>:</b> 3046059 <b>Sample:</b> 7642201	-1-BKS	Batcl	<b>h #:</b> 1					Matrix:	Solid		
Units:	mg/kg		BLAN	K/BLANK	SPIKE / 1	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	DY	
	Chloride by EPA 300	Blank Sample Result	Spike Added	Blank Spike	Blank Spike	Spike Added	Blank Spike	Blk. Spk Dup.	RPD	Control Limits	Control Limits	Flag
Analy	vtes	[A]	[ <b>B</b> ]	Result [C]	%R [D]	[E]	Duplicate Result [F]	%R [G]	%	%R	%RPD	

Relative Percent Difference RPD =  $200^{*}|(C-F)/(C+F)|$ Blank Spike Recovery [D] =  $100^{*}(C)/[B]$ Blank Spike Duplicate Recovery [G] =  $100^{*}(F)/[E]$ All results are based on MDL and Validated for QC Purposes



## **BS / BSD Recoveries**



#### Project Name: GJ West Coop Unit #011

Work Ord	<b>ler #:</b> 581273								Proj	ject ID:			
Analyst:	ARM		D	ate Prepar	ed: 04/05/201	18			Date A	nalyzed: (	04/05/2018		
Lab Batch I	ID: 3045830 S	Sample: 7642101-1-	-BKS	Batch	<b>h #:</b> 1					Matrix: S	Solid		
Units:	mg/kg			BLAN	K /BLANK	SPIKE / !	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	DY	
	TPH by SW8015 M	Iod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	alytes		I										<u> </u>
Gasolin	ne Range Hydrocarbons (GRO)		<15.0	1000	859	86	1000	897	90	4	70-135	20	
Diesel F	Range Organics (DRO)		<15.0	1000	910	91	1000	951	95	4	70-135	20	
Analyst:	ARM		D	ate Prepar	red: 04/06/201	18			Date A	nalyzed: (	04/06/2018		•
Lab Batch I	<b>ID:</b> 3046079 <b>S</b>	Sample: 7642256-1-	-BKS	Batel	<b>h #:</b> 1					Matrix: S	Solid		
Units:	mg/kg			BLAN	K /BLANK	SPIKE / [	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	DY	,
Ana	TPH by SW8015 M	Iod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	ne Range Hydrocarbons (GRO)		<15.0	1000	995	100	1000	1110	111	11	70-135	20	
												-	
Diesel F	Range Organics (DRO)		<15.0	1000	1030	103	1000	1170	117	13	70-135	20	

Relative Percent Difference RPD =  $200^{*}|(C-F)/(C+F)|$ Blank Spike Recovery [D] =  $100^{*}(C)/[B]$ Blank Spike Duplicate Recovery [G] =  $100^{*}(F)/[E]$ All results are based on MDL and Validated for QC Purposes



#### Project Name: GJ West Coop Unit #011



Work Order # :	581273						Project II	<b>)</b> :				
Lab Batch ID:	3046056	QC- Sample ID:	581273	-031 S	Ba	tch #:	1 Matrix	k: Soil				
Date Analyzed:	04/06/2018	Date Prepared:	04/06/2	018	An	alyst: A	ALJ					
<b>Reporting Units:</b>	mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Ι	BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
	Analytes	[A]	[B]	[0]	[D]	[E]	itesuit [i ]	[G]				
Benzene		<0.00200	0.0998	0.0485	49	0.100	0.0373	37	26	70-130	35	X
Toluene		<0.00200	0.0998	0.0431	43	0.100	0.0325	33	28	70-130	35	X
Ethylbenzene		< 0.00200	0.0998	0.0392	39	0.100	0.0306	31	25	70-130	35	X
m,p-Xylenes		< 0.00399	0.200	0.0808	40	0.200	0.0577	29	33	70-130	35	X
o-Xylene		< 0.00200	0.0998	0.0434	43	0.100	0.0356	36	20	70-130	35	X
Lab Batch ID:	3046139	QC- Sample ID:	581096	-002 S	Ba	tch #:	1 Matrix	k: Soil				
Date Analyzed:	04/05/2018	Date Prepared:	04/05/2	018	An	alyst: 1	ALJ					
<b>Reporting Units:</b>	mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
F	BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene		<0.00200	0.100	0.0822	82	0.0996	0.0869	87	6	70-130	35	
Toluene		<0.00200	0.100	0.0609	61	0.0996	0.0705	71	15	70-130	35	X
Ethylbenzene		<0.00200	0.100	0.0434	43	0.0996	0.0553	56	24	70-130	35	X
m,p-Xylenes		<0.00401	0.200	0.0869	43	0.199	0.111	56	24	70-130	35	X
o-Xylene		<0.00200	0.100	0.0449	45	0.0996	0.0578	58	25	70-130	35	X

Matrix Spike Percent Recovery  $[D] = 100^{*}(C-A)/B$ Relative Percent Difference RPD =  $200^{*}|(C-F)/(C+F)|$  Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



#### Project Name: GJ West Coop Unit #011



Work Order # :	581273						Project II	<b>)</b> :				
Lab Batch ID:	3045902	QC- Sample ID:	581273	-005 S	Ba	tch #:	1 Matrix	k: Soil				
Date Analyzed:	04/05/2018	Date Prepared:	04/05/2	018	Ar	nalyst: (	OJS					
<b>Reporting Units:</b>	mg/kg		N	IATRIX SPIK	E / MAT	'RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
	Chloride by EPA 300	Parent Sample Result	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample		RPD	Control Limits %R	Control Limits %RPD	Flag
	Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%K	%KPD	
Chloride		145	250	393	99	250	394	100	0	90-110	20	
Lab Batch ID:	3045902	QC- Sample ID:	581462	-001 S	Ba	tch #:	1 Matrix	<b>k:</b> Soil				
Date Analyzed:	04/05/2018	Date Prepared:	04/05/2	018	Ar	nalyst: (	OJS					
<b>Reporting Units:</b>	mg/kg		Ν	IATRIX SPIK	E / MAT	'RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
	Chloride by EPA 300	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Chloride		35.5	246	278	99	246	277	98	0	90-110	20	
Lab Batch ID:	3045932	C- Sample ID:	581273	-035 S	Ba	tch #:	1 Matrix	<b>k:</b> Soil				
Date Analyzed:	04/06/2018	Date Prepared:	04/06/2	018	Ar	nalyst: S	SCM					
<b>Reporting Units:</b>	mg/kg		N	IATRIX SPIK	E / MAT	'RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
	Chloride by EPA 300	Parent Sample Result	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Chloride		7.10	247	252	99	247	253	100	0	90-110	20	

Matrix Spike Percent Recovery  $[D] = 100^{\circ}(C-A)/B$ Relative Percent Difference RPD =  $200^{\circ}|(C-F)/(C+F)|$  Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



#### Project Name: GJ West Coop Unit #011



Work Order # :	581273						Project II	):				
Lab Batch ID:	3045932	QC- Sample ID:	581425	-002 S	Ba	tch #:	1 Matrix	: Soil				
Date Analyzed:	04/06/2018	Date Prepared:	04/06/2	018	Ar	nalyst: S	SCM					
<b>Reporting Units:</b>	mg/kg		Ν	IATRIX SPIK	E / MAT	'RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
	Chloride by EPA 300	Parent Sample Result	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Chloride		730	248	953	90	248	969	96	2	90-110	20	
Lab Batch ID:	3046059	QC- Sample ID:	581273	-014 S	Ba	tch #:	1 Matrix	: Soil				
Date Analyzed:	04/06/2018	Date Prepared:	04/06/2	018	Ar	nalyst: (	OJS					
<b>Reporting Units:</b>	mg/kg		Ν	IATRIX SPIK	E / MAT	'RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
	Chloride by EPA 300	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Chloride		84.1	247	337	102	247	332	100	1	90-110	20	
Lab Batch ID:	3046059	QC- Sample ID:	581273	-024 S	Ba	tch #:	1 Matrix	: Soil				
Date Analyzed:	04/06/2018	Date Prepared:	04/06/2	018	Ar	nalyst: (	OJS					
<b>Reporting Units:</b>	mg/kg		Ν	IATRIX SPIK	E / MAT	'RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
	Chloride by EPA 300	Parent Sample Result	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Chloride		<4.95	248	251	101	248	252	102	0	90-110	20	

Matrix Spike Percent Recovery  $[D] = 100^{\circ}(C-A)/B$ Relative Percent Difference RPD =  $200^{\circ}|(C-F)/(C+F)|$  Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



#### Project Name: GJ West Coop Unit #011



Work Order # :	581273						Project II	<b>)</b> :				
Lab Batch ID:	3045830	QC- Sample ID:	581096	-005 S	Ba	tch #:	1 Matrix	<b>k:</b> Soil				
Date Analyzed:	04/05/2018	Date Prepared:	04/05/2	018	Ar	alyst: A	ARM					
<b>Reporting Units:</b>	mg/kg		Ν	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Т	TPH by SW8015 Mod	Parent Sample Result	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample		RPD	Control Limits	Control Limits	Flag
	Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Gasoline Range H	Hydrocarbons (GRO)	91.9	998	1020	93	1000	990	90	3	70-135	20	
Diesel Range Org	ganics (DRO)	743	998	1860	112	1000	1880	114	1	70-135	20	
Lab Batch ID:	3046079	QC- Sample ID:	581273	-001 S	Ba	tch #:	1 Matrix	<b>k:</b> Soil				
Date Analyzed:	04/06/2018	Date Prepared:	04/06/2	018	Ar	alyst: A	ARM					
<b>Reporting Units:</b>	mg/kg		Ν	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Т	TPH by SW8015 Mod	Parent Sample Result	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample		RPD	Control Limits	Control Limits	Flag
	Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Gasoline Range H	Hydrocarbons (GRO)	<15.0	998	983	98	999	1010	101	3	70-135	20	
Diesel Range Org	ganics (DRO)	<15.0	998	1040	104	999	1070	107	3	70-135	20	

Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E

any Ic terms	5 R	3									12	1	10	9	œ	7	6	сл	4	ω	2	<u> </u>	No.	Callip	0	Proje	Email:	2057 ( Midlan	TRC	Comp				D	St S	4	•
revuce, revise, signature or tims document and reiniquisitient or samples construies a valor purchase order non-neini, company to Astroc, its animates and subcornacion any losses or expenses incurred by the Client fauch losse are due to circumstances beyond the control of Xenco. A minimum charge of \$75 will be applied to each projec terms will be enforced unless previously negotiated under a fully executed client contract.	Relinquished by:	neiiiiquisiteu by.	Relinquished by Samples		TAT Starts Day received by Lab, if received by 5:00 pm	3 Day EMERGENCY	2 Day EMERGENCY	Next Day EMERGENCY	Same Day TAT	Turnaround Time (Business days)	N-2 @ 18'	N-2 @ 6'	N-2 @ 3'	N @ 18'	N @ 6'	N @ 3'	RP-2 @ 18'	RP-2 @ 6'	RP-2 @ 3'	RP @ 18'	RP @ 9'	RP @ 3'	Field ID / Point of Collection	CAIIIPICIS S MAILIC. LAVIT COLINCI	Joel Lowry	Project Contact:	: ilowry@trcsolutions.com zconder@trcsolutions.com	2057 Commerce Drive Midland, TX 79703	Environmental Corporation	Company Name / Branch:	Client / Reporting Information			Dallas Texas (214-902-0300)	Setting the Standard since 1990 Stafford, Texas (281-240-4200)	LABORATORIES	XENCO
r a fully executed client co				SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COL	received by 5:00		X Contract TAT	7 Day TAT	5 Day TAT																		Phone No: 432-466-4450										
es beyond t ontract.	Date Time:		4/3/12	MUST BE	pm						18'	<u>6</u>	બ	18'	6	ų	18'	6 <u>'</u>	<u>3</u>	18'	9	ų	Sample Depth														
he control of Xer			3.36	DOCUMENTED							3/30/2018	3/30/2018	3/30/2018	3/30/2018	3/30/2018	3/30/2018	3/30/2018	3/30/2018	3/30/2018	3/30/2018	3/30/2018	3/30/2018	Date		Invoice:		Invoice To: COG Operating C/O Becky Haskell	Eddy Co, NM	GJ West Coop Unit #011 Project Location:	Project Name/N		Ser and		Midland, Texas (432-704-5251)	San Antonio, Texas (210-509-3334)		
nco. A minim	Received By:	3	Received By:	BELOW EAG			Lev	Lev	Lev		54;11	04:11	11:35	11:30	11:25	02:11	11:15	01:11	20:11	11:00	10:55	10:50	Time				C/O Becky H		p Unit #01	umber:	Proje			as (432-70	Texas (21		CH
um charge (	By:	ey.	and the second	CH TIME S/		TRRP Checklist	Level 3 (CLP Forms)	el III Std (	Level II Std QC	Dat	S	S	S	S	s	S	S	s	s	s	s	s	Matrix b				laskell				Project Information		WWW	4-5251)	0-509-33	-	AIN
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e applied to		(	TO	HANGE PO				s		ble Informa													NaOH/Zn Acetate	-									mo			Of	
each proje	Custo	4	2 10	SSESSION			us.		Lev	tion													HNO3 O H2SO4													ω	SUC
		4	Relinquished By:	, INCLUDIN			UST / RG -411	TRRP Level IV	Level IV (Full Data														NaOH/Zn Acetate HNO3 00 H2SO4 00 NaOH 00 NaHSO4 00 MEOH 00														CUSTOD
(6-23	Temp: ①、 ♥ CF:(0-6: -0.2°C )		š š																																		DY
(6-23: +0.2°C) ₹ Δ	-0.2°	Z		IRIER DELIVERY					Pkg /raw data)		××	×	××	××	×	××	××	×	××	××	×	××	TPH 801	_		ĸt									Phoenix, Arizona (480-355-0900)		
C)	0		Date lime:	_									×			×			×			×	BTEX 80									Ana			Arizona		
N	IR II		Ime:		FEI	dne	kbl	rha	ilov		_												Hold									Analytical Information			(480-355		
	R ID:R-8	_			FED-EX / UPS: Tracking #	dneel2@concho.com	kblackburn@trcsolutions.com	rhaskell@concho.com	ilowry@trcsolutions.com	Notes:																						ormation	X		-0900)		
		1000100U	2 2	1	S: Tracki	cho.com	trcsolutio	ncho.con	olutions.c																				5			13	Xenco Job #				
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yzed will be	Cooler Temp.		16	11	0				IN														π										24				
invoiced a	Thern	,	44						conder@														Field Comments	A = Air		WI = Wipe	SW = Surfac SL = Sludge OW =Ocean/	DW = Drinkii P = Product	GW =0	W = Water		Matri	μ				
t \$5 per san	Thermo. Corr. Factor		2/ 81	and a state of the					zconder@trcsolutions.com														ments	A = Air	ll Naeto Wa	/ipe	SW = Surface water SL = Sludge OW =Ocean/Sea Water	DW = Drinking Water P = Product	S = Soll/Seg/Solid GW =Ground Water	ater		Matrix Codes					
anco but not analyzed will be invoiced at \$5 per sample. These	actor		)48	10. 10. 10 m					<u>1s.com</u>															4101	for		rater a Water	Water	ater	2							

Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and s any losses or expenses incurred by the Client if such tosses are due to circumstances beyond the control of Xenco. A minimum charge of \$75 will be applied to terms will be enforced unless previously negotiated under a fully executed client contract.	Relinquished by:	Relinquished by:	Sampler:	SAMPLE CUSTODY MU	TAT Starts Day received by Lab if received by 5.00 pm	3 Day EMERGENCY	2 Day EMERGENCY     X Contract TAT	Next Day EMERGENCY	Same Day TAT 5 Day TAT	Turnaround Time ( Business days)	12 W-2 @ 8'	11 W-2 @ 2'	10 W-2 @ Surface 0	9 W@18'	8 W @ 6'	W @ 3'	6 E-2 @ 18'	5 E-2 @ 9'	4 E-2 @ 3'	3 E@ 18'	2 E@9'	1 E@3'	No. Field ID / Point of Collection Sa		Samplers's Name: Zach Conder	Project Contact: Joel Lowry	zconder@trcsolutions.com 432.466.4450	2057 Commerce Drive Midland, TX 79703	Company Address:	Company Name / Branch: TRC Environmental Corporation	Client / Reporting Information			Dallas Texas (214-902-0300)	Setting the Standard since 1990 Stafford,Texas (281-240-4200)		XENCO
a valid purchase order fr eyond the control of Xe rct.	Date Time:	lime:	Date Time: 1/3/17 3:36	ST BE DOCUMENTED						and the second se	8' 3/30/2018	3/30/2018	3/30/2018	3/30/2018	3/30/2018	3/30/2018	<b>18'</b> 3/30/2018	9' 3/30/2018	3/30/2018	<b>18'</b> 3/30/2018	<b>9'</b> 3/30/2018	3' 3/30/2018	Sample Depth Date	Collection		Invoice:	COG Operating	Eddy Co, NM	Project Location:	Project Name/Number: GJ West Coop Unit #011				Midland, Tey	San Antonio		
● In a client company to Xenco, its affiliates and so anco. A minimum charge of \$75 will be applied to the source of \$75 will be applied to t	Received By:	Réceived By:	Received By:	SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY		TRRP Checklist	Level 3 (CLP Forms)	Level III Std QC+ Forms	Level II Std QC	Data Deliverable Information	12:45 S 1	1 s 04:21	12:55 s 1	1 s 1	1 s 25:21	1 s 05:31	12:15 S 1	12:/0 S 1	1 s \$9:21	1 s 00:21	1 s 1	11:50 S 1	Time Matrix bottles HCI NaOH/Zn Accetate	Numt			COG Operating C/O Becky Haskell		n:	Number: op Unit #011	Project Information		www.xenco.com	Midland, Texas (432-704-5251)	San Antonio, Texas (210-509-3334)	Page 2 Of	CHAIN OF
	Temp: J. (	Relinquished By:	Relinquished By: 2	OSSESSION, INCLUDING COURIER DE			UST / RG -411	TRRP Level IV	Level IV (Full Data Pkg /raw data)	ation	×		×	×		×	×		×	×			HNO3 H2SO4 NaOH NaHSO4 MEOH NONE TPH 80	Number of preserved bottles	ΛĒ	xt									Pho	ω	CUSTODY
Х 4	IR ID:R-8	Data Time:	Date Time:		FED-EX	dneel20	kblackbu	rhaskell		Not	×	×	××	×	×	× ×	×	×	××	×	×	××	Chloride BTEX 8 Hold	εE	300							Analytical Information			Phoenix, Arizona (480-355-0900)		
iable only for the cost of samples and shall not assume any responsibility for received by Xenco but not analyzed will be invoiced at S5 per sample. These	On Ice Cooler Temp. Thermo. Corr. Factor	IRAceived By:	24 Mar 1/1/ 1/18 1/140	11 1	EEDLEY / IIDS: Tracking #	dneel2@concho.com	kblackburn@trcsolutions.com	rhaskell@concho.com	lowry@trcsolutions.com zconder@trcsolutions.com	Notes:													Field Comments	A = Air	WW= Waste Water	WI = Wipe	SW = Surrace water SL = Sludge OW =Ocean/Sea Water	P = Product	GW =Ground Water	W = Water S = Soil/Sed/Solid		ation Matrix Codes	Xenco Job # 58/275		00)		

Dallas Texas (214-902-0300)

# CHAIN OF CUSTODY

Page 3 Of 3

Midland, Texas (432-704-5251) San Antonio, Texas (210-509-3334)

Phoenix, Arizona (480-355-0900)

Project Contact: Joel Lowry Samplers's Name: Zach Conder Email: Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assign any losses or expenses incurred by the Client if such loses are due to circumstances beyond the control of Xenco. A minimum charge of \$75 will be applied to each project. Xenco' terms will be enforced unless previously negotiated under a fully executed client contract. 2057 Commerce Drive No. Midland, TX 79703 Company Address: **TRC Environmental Corporation** Company Name / Branch: 10 9 8 6 G 12 1 7 ω 5 Relinquished by: 3 Day EMERGENCY Same Day TAT Relinquished by: Relinquished by Sampler: 2 Day EMERGENCY Next Day EMERGENCY 8 @ S S @ 2' S @ Surface DT-3 @ 8' DT-3 @ Surface DT-2 @ 2' DT-2 @ Surface DT-1 @ 3 18 DT-1 @ ) 6 DT-1 @ 3' DT-3 @ 4' DT-2 @ 8 **Client / Reporting Information** TAT Starts Day received by Lab, if received by 5:00 pm ilowry@trcsolutions.com zconder@trcsolutions.com N Turnaround Time (Business days) Field ID / Point of Collection X Contract TAT 7 Day TAT 6 Day TAT 432-466-4450 Phone No: SAMPLE CUSTODY MUST BE DOCUMENTED BELOW, EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY Sample Depth Date Time: Date Time: Date Time: RI FILA 0-3" 0-3" 0-3" œ 18' 6 ŝ œ N œ 4 N Project Name/Number: GJ West Coop Unit #011 COG Operating C/O Becky Haskell Eddy Co, NM Invoice: Project Location nvoice To: 3:36 4/2/2018 4/2/2018 4/2/2018 4/2/2018 Collection 4/2/2018 4/2/2018 4/2/2018 4/2/2018 4/2/2018 4/2/2018 4/2/2018 4/2/2018 Date 10:00 50:01 1 Received By: 56:17 52:11 01:01 06:11 11:15 11:10 11:30 00:11 1:05 Received By: Receivéd By: TRRP Checklist 1:20 Time Project Information Level 3 (CLP Forms) Level III Std QC+ Forms Level II Std QC Matrix S S S S S S S S S S S S www.xenco.com Data Deliverable Information # of bottles Juny -------\_ --\_ \_ нсі NaOH/Zn Acetate нноз q Custody Sea **Relinquished By:** Relinquished By: UST / RG -411 **TRRP Level IV** Level IV (Full Data Pkg /raw data) H2SO4 NaOH NaHSO4 MEOH CF:(0-6: -0.2°C) Temp: NONE (6-23: +0.2°C) TPH 8015 M Ext × × × × × × × × Chloride E 300 × × × × × × × ×  $\times$ ×  $\times$ × 5.6 Date Time: Date Time: BTEX 8021B × × × × Analytical Information Hold FED-EX / UPS: Tracking # dneel2@concho.com kblackburn@trcsolutions.com lowry@trcsolutions.com haskell@concho.com IR ID:R-8 Notes: Xenco Job # Received By: S812+x Cooler Temp. Thermo. Corr. Factor U- Q of samples and shall not assume any responsibility for not analyzed will be invoiced at \$5 per sample. These 0 44 zconder@trcsolutions.com Field Comments 20 WI = Wipe O = Oil OW =Ocean/Sea Water SL = Sludge SW = Surface water P = Product DW = Drinking Water GW =Ground Water W = Water S = Soil/Sed/Solid WW= Waste Water A = AirMatrix Codes 48

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## **XENCO** Laboratories



ATORIES Prelogin/Nonconformance Report- Sample Log-In

Client: TRC Solutions, Inc	Acceptable Temperature	Range: 0 - 6 degC						
Date/ Time Received: 04/04/2018 10:48:00 AM	Air and Metal samples Acceptable Range: Ambient							
Work Order #: 581273	Temperature Measuring device used : R8							
Sample Recei	pt Checklist	Comments						
#1 *Temperature of cooler(s)?	3.4							
#2 *Shipping container in good condition?	Yes							
#3 *Samples received on ice?	Yes							
#4 *Custody Seals intact on shipping container/ cooler?	N/A							
#5 Custody Seals intact on sample bottles?	N/A							
#6*Custody Seals Signed and dated?	N/A							
#7 *Chain of Custody present?	Yes							
#8 Any missing/extra samples?	No							
#9 Chain of Custody signed when relinquished/ received?	No	"Relinquished By" Signature was not there. Received by mail.						
#10 Chain of Custody agrees with sample labels/matrix?	Yes							
#11 Container label(s) legible and intact?	Yes							
#12 Samples in proper container/ bottle?	Yes	TPH received in bulk container						
#13 Samples properly preserved?	Yes							
#14 Sample container(s) intact?	Yes							
#15 Sufficient sample amount for indicated test(s)?	Yes							
#16 All samples received within hold time?	Yes							
#17 Subcontract of sample(s)?	No							
#18 Water VOC samples have zero headspace?	N/A							

#### \* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#:

Checklist completed by:

Date: 04/04/2018

Checklist reviewed by: Jession Vramer

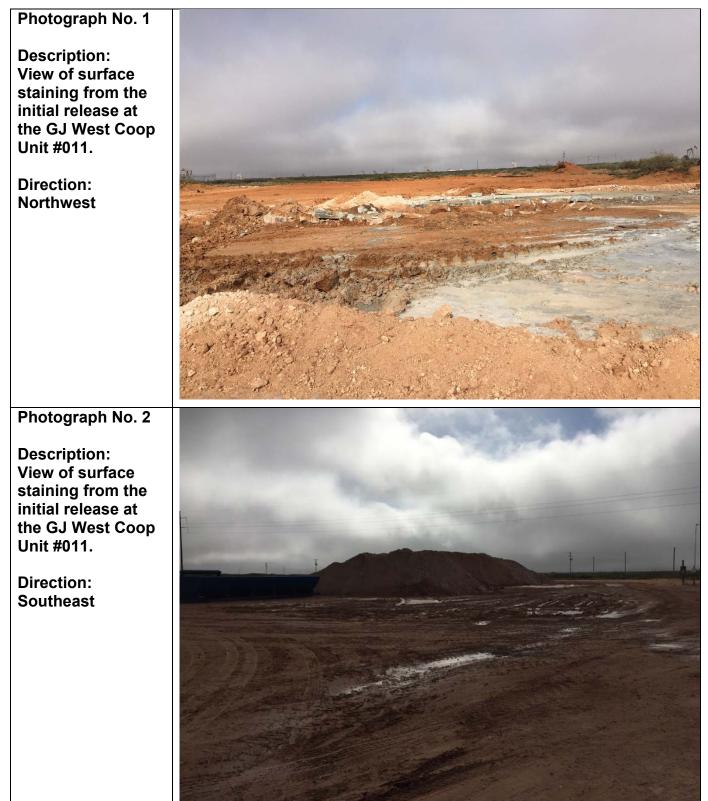
Jessica Kramer

Katie Lowe

Date: 04/05/2018

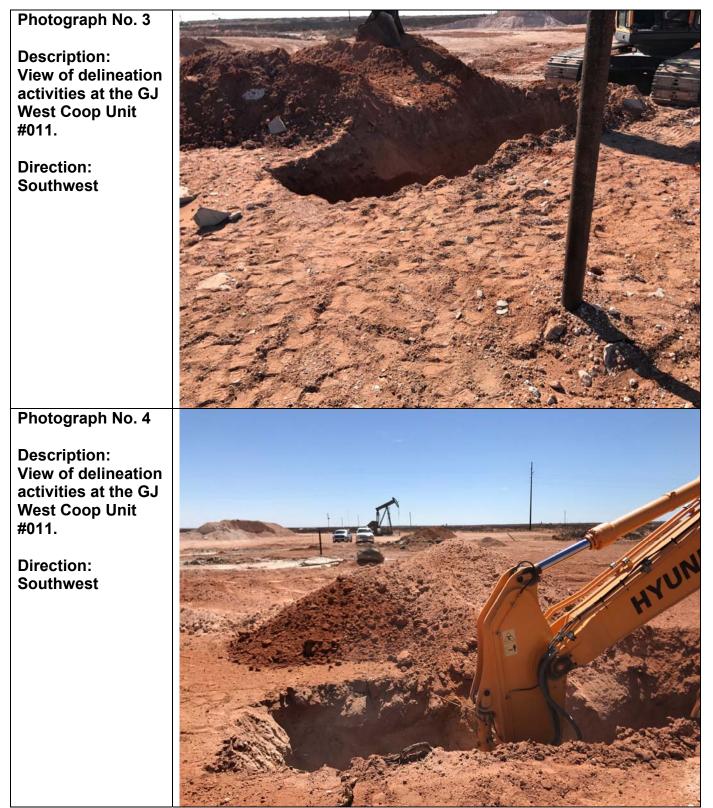


Client: COG Operating, LLC Project Name: GJ West #108 & #011



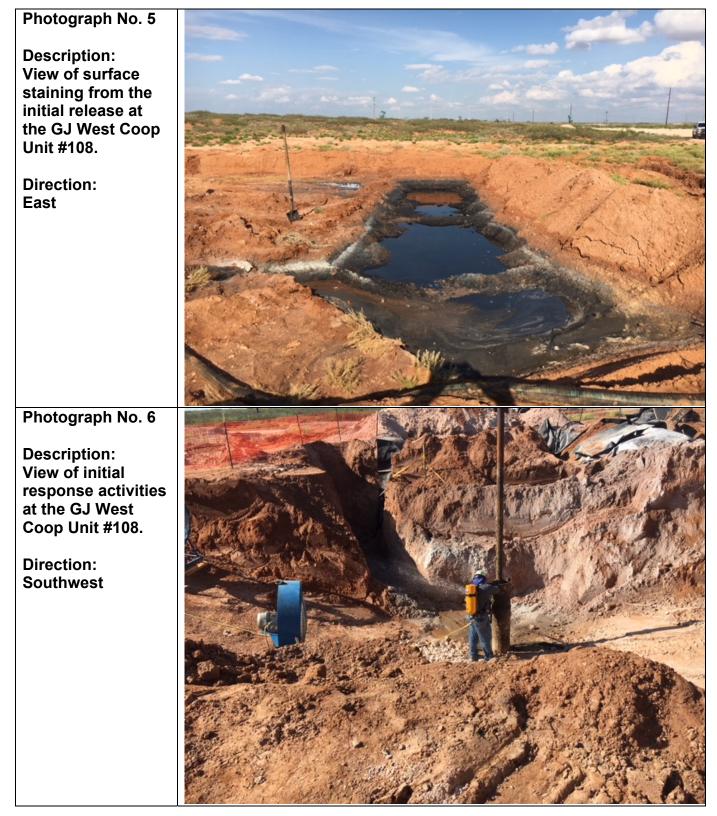


Client: COG Operating, LLC Project Name: GJ West #108 & #011



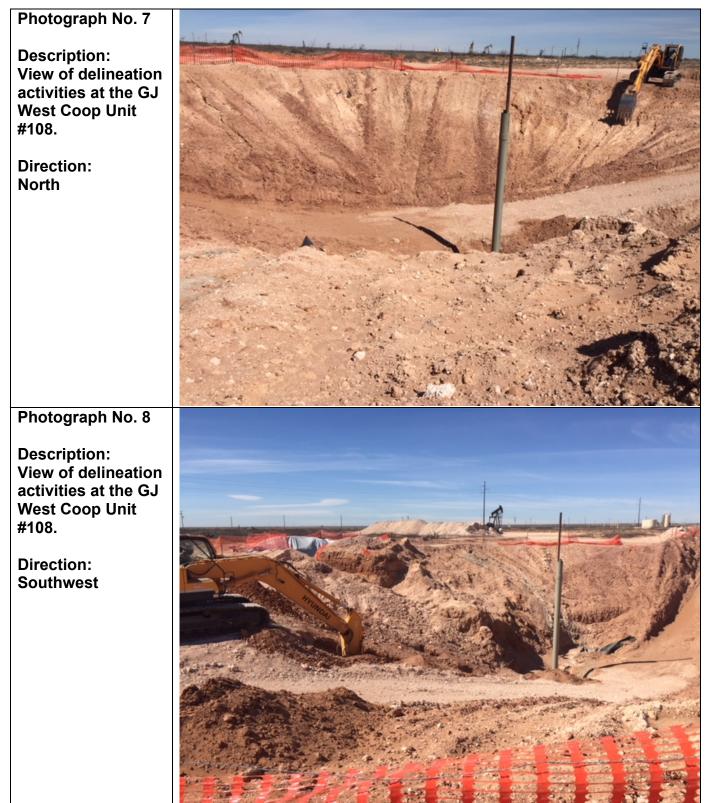


Client: COG Operating, LLC Project Name: GJ West #108 & #011



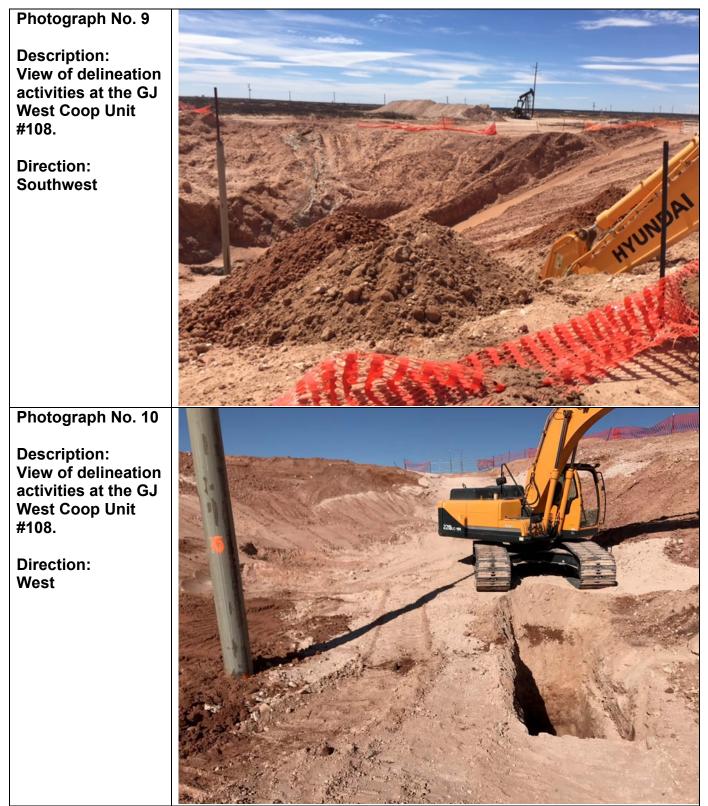


#### Client: COG Operating, LLC Project Name: GJ West #108 & #011





Client: COG Operating, LLC Project Name: GJ West #108 & #011



District IV 1220				Conservation Division 0 South St. Francis Dr. RI Santa Fe, NM 87505			Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.					ice in 1AC.	
Release Notification and Corrective Action													
ΛΑΝΙΠΛΛΛΛΓΛΙ								CUUI		Report		Final F	lenort
						OPERATOR Contact:			Initial Report Final Report Final Report				
Address: 600 West Illinois Avenue, Midland TX 79701						Felephone I			32-683-7443				
Facility Name: G J West Coop Unit #108							ie:	We					]
Surface Owner: State Mineral Owner: S									API No	. 30-015-	20192		
LOCATION OF RELEASE													
Unit Letter	Section 28	Township 17S	Range 29E	Feet from the 1980		South Line North	Feet from the 660		West Line West		Count Eddy	•	
Latitude 32.8073502 Longitude -104.0862198													
NATURE OF RELEASE													
Type of Rele	ase:					Volume of	Release:		Volume Recovered:				
Source of Re	lense <sup>.</sup>	Produced	Water			Date and I	3,075 bbl. lour of Occurrence		Date and	3,05 Hour of D	5 bbl.		
		Plugged	Weii			Augus	at 7, 2017 12:00 p			Lugust 7, 20			
Was Immedi	ate Notice C		Ver [	No 🗌 Not R	onuired	If YES, To	Whom? Ms. Weave	r NM		Groves -	910		!
ļ	By	Whom? Reb				Date and I	Hour: August 9, 20			. 010763 - 1	<u> </u>		
Was a Water		hed?					olume Impacting t				•,		
			Yes 🛛	No									
If a Waterco	urse was Im	pacted, Descri	be Fully."	l									
		······································											
Describe Cause of Problem and Remedial Action Taken.*													
The release was from a well that was previously plugged in 2015. The release was discovered by air patrol and immediate actions were taken to regain control of the well. The well will be re-plugged. The release is currently under control, if additional fluids are lost subsequent to the filling of this Initial C-141 a revised C-141 will be submitted with updated volumes.											al C-		
Describe Area Affected and Cleanup Action Taken.*													
The release was on location. A liner was installed to capture produced water and limit impact to soil. Vacuum trucks were dispatched to remove all freestanding fluids. Approximately 1,008 cubic yards of impacted soil was excavated and taken to a NMOCD approved disposal facility. Concho will have the spill area sampled to delineate any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities.													
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability											y j		
should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.													
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Printed Nam	ie:	Rebecca	Haskell			Approved by	<u>/Environmental S</u>	pecialis	st: UU	Atr.	VI	NY	$\sim$
<u>Title:</u>		Senior H	SE Coordi	nator		Approval Da	ite: 8 18/1	7	Expiration	Date: N	1/A		
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#### **NM OIL CONSERVATION**

Energy Minerals and Natural ResourceAUG 1 7 2017

Form C-141 Revised August 8, 2011

State of New Mexico

District ( 1625 N. French Dr., Hobbs, NM 88240 District II 811 S. First St., Artesia, NM 88210

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## ARTESIA DISTRICT

ARTESIA DISTRICT District 1 State of New Mexico 1625 N, French Dr., Hobbs, NM 88240 Energy Minerals and Natural Resources CT 2 3 2017 Form C-141 District II Revised April 3, 2017 811 S. First St., Artesia, NM 88210 Submit 1 Copy to appropriate District Office in District III **Oil Conservation Division** 1000 Rio Brazos Road, Aztec, NM 87410 accordance with 19.15.29 NMAC. RECEIVED 1220 South St. Francis Dr. District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505 Santa Fe, NM 87505 **Release Notification and Corrective Action OPERATOR** Initial Report П **Final Report** of Company: COG Operating, LLC OGRID #229137 Robert McNeil Contact: Address: 600 West Illinois Avenue, Midland, TX 79701 Telephone No. 432-683-7443 Facility Name: G J West Coop Unit #011 Facility Type: Injection Well Surface Owner: State Mineral Owner: State API No. 30-015-10827 LOCATION OF RELEASE North/South Line Unit Letter Section Township Range Fect from the Feet from the East/West Linc County 1980 West Ε 28 175 29Ė 330 Eddy North Longitude -104.0872955 NAD83 Latitude 32.8073502 NATURE OF RELEASE Type of Release: Produced Water Volume of Release: Unknown Volume Recovered: 8,740 bbls as of 6:00 TBD am October 23, 2017 Source of Release: Injection Well Date and Hour of Occurrence: Date and Hour of Discovery: October 15, 2017 10:20 am October 15, 2017 10:20 am Was Immediate Notice Given? If YES, To Whom? Yes 🗍 No 🗌 Not Required Ms. Weaver -- NMOCD / Ms. Groves - SLO By Whom? Rebecca Haskell Date and Hour: October 15, 2017 12:50 pm Was a Watercourse Reached? If YES, Volume Impacting the Watercourse. 🗌 Yes 🖾 No If a Watercourse was Impacted, Describe Fully,\* Describe Cause of Problem and Remedial Action Taken.\* The release is from an injection well. Produced water is coming up to the surface. Immediate actions were taken to regain control of the well and are still ongoing. The well will be plugged. A berm was constructed around the well to capture the produced water and is being recovered and disposed of. The Initial C-141 will be revised with a corrected volume once the release is stopped. Describe Area Affected and Cleanup Action Taken.\* The release is on location. A berm was constructed to capture the produced water and limit impact to soil. Vacuum trucks were dispatched to remove all freestanding fluids. Concho will have the spill area sampled to delineate any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities. I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. OIL CONSERVATION DIVISION Keldica Signature: Approved by Environmental Specialist: Printed Name: **Rebecca Haskell** Approval Date: 10124 Expiration Title: Senior HSE Coordinator Date: E-mail Address: rhaskell@concho.com **Conditions of Approval:** Attached · attacl Date: October 23, 2017 Phone: 432-683-7443

NM OIL CONSERVATION

\* Attach Additional Sheets If Necessary