



Mr. Michael L. Bergstrom
Shell Exploration & Production Co.
4582 S. Ulster Pkwy., Suite 1400
Denver, CO 80237

April 12, 2012

**Subject: Webb 3-23 Gas Well Completion Pit Closure Report
Webb and Hage Land and Cattle Company Lease
Cuervo, Guadalupe County, New Mexico**

Dear Mr. Bergstrom:

AMEC Environment and Infrastructure, Inc. (AMEC) is submitting this closure report for the completion pit at the Webb 3-23 natural gas well (API # 3001920135) located in Section 23; Township 11 North; Range 23 East of Guadalupe County, New Mexico (Figure 1). This wildcat gas well was completed and ready for flow testing on October 4, 2008. This well was drilled using closed-loop methods and the pit was used solely for the containment of completions materials. This report was prepared in accordance with guidelines published in New Mexico Administrative Code 19.15.17.13 and includes a brief description of the pit closure process, analytical results for the soil samples collected following liner removal, backfilling, and revegetation procedures.

SCOPE OF WORK

The scope of work described below was conducted in accordance with the New Mexico Administrative Code 19.15.17.13 and the New Mexico Oil Conservation Division (OCD) guidance document *New Mexico Pit Closure Plan*. The scope of work for the pit closure included:

- Removal of fluid and mud from the lined pit;
- Removal of the 30 mil high density polyethylene (HDPE) pit liner;
- Transport and disposal of drilling, completions, and flow-back fluids, mud and 30 mil HDPE liner;
- Removal, stockpiling, sampling, transport, and disposal of approximately 450 cubic yards of soil from the bottom of the excavation;
- Collection and laboratory analysis of samples from the excavation bottom and three stockpiles of soil removed from the excavation;
- Backfilling to grade, contouring with the surrounding topography, and seeding;
- Reporting the results of the closure in this report.

FIELD ACTIVITIES

Between July 7 and December 12, 2010, Robinson Construction Group (Robinson) removed 4,600 barrels (193,200 gallons), of fluid from the three cells of the completion pit and transported it to the Gandy-Marley Inc. (GMI) oil-field waste disposal facility located in Tatum, New Mexico (facility ID # NM 711-1-0020). This was done as an interim management measure to maintain at least 10-feet of free board on the pit.

Robinson arrived on location in July of 2011 and photographed each compartment of the completion pit (Appendix A, Photos 1-3). Between July 16 and August 8, 2011, Mike's Oil Field Services (Mike's) removed 4,280 barrels (179,760 gallons), of additional fluid and 272 cubic yards of mud from the three cells of the completion pit. Robinson began removing the fluids from the pit on July 31, 2011 (Appendix A, Photos 4-5). Robinson began removing soil from the east cell on July 27, 2011 and had completed the removal of approximately 1,304 cubic yards of soil beneath the liner in all cells on August 10, 2011 (Appendix A, Photos 4, 5, 11, 12, 13, and 19). Fluid was removed and transported in vacuum trucks, the mud was transported in lined roll-off containers by Mike's, and the soil and liner were transported in end dump trucks by Robinson to the GMI in Tatum, New Mexico for proper disposal. Robinson returned the GMI disposal load tickets directly to Shell Exploration & Production Company. As the liner was being removed, no visible indications of a breach were observed in the liner. There were, however, wet areas in the bottom of the excavated areas in each of the cells. Inspection of the excavation indicated that bedrock was exposed over the majority of the bottom.

On August 10, 2011, with Mr. Ed Martin of the New Mexico Oil Conservation Division (OCD) was on-site, AMEC collected three five-point composite soil samples from the bottom of the excavation and one composite sample from each cell, after liner and soil removal as depicted on Figure 2 (Appendix A, Photos 6-11; 13-17; 20-24). A single point water sample was also collected from the middle portion of the central cell depicted on Figure 2. AMEC also collected two eight-point composite samples from 200 cubic yard and 150 cubic yard stockpiles of soil removed from the excavation and placed to the south and north of the pit, respectively (Appendix A, Photos 25 and 26). AMEC also collected a six-point composite sample from a windrow soil stockpile of approximately 100 cubic yards that was placed to the west of the excavation (Appendix A, Photo 26).

Soil samples were collected in properly labeled 4-ounce glass sample jars, placed in a cooler with ice, and transported under chain-of custody to Hall Environmental Analytical Laboratory in Albuquerque, New Mexico. The samples were analyzed for motor oil range organics, diesel range organics, gasoline range organics, total petroleum hydrocarbons, benzene, toluene, ethyl benzene, xylenes (collectively BTEX), and chloride.

The chloride laboratory analytical results for each of the five-point composite samples ranged from 930 to 6,000 parts per million (ppm) or milligrams per liter. The chloride laboratory analytical results for the south and north stockpile eight-point composite samples were 7,400 and 5,900 ppm, respectively. The chloride laboratory analytical

result for the six-point windrow sample was 14,000 ppm, and the water sample chloride result was 55,000 ppm. All of the organic constituents were detected at concentrations below the OCD regulatory limits. The laboratory analytical results are summarized in Table 1 and the laboratory analytical results package is included in Appendix B.

Mr. Martin was contacted via telephone and informed of the analytical results and he indicated that the excavation bottom could be ripped as much as practicable and clean backfill material mixed 3:1 with soil in the bottom of the excavation. Mr. Martin indicated this could be followed by backfilling and compaction with the clean soil stockpile but the three stockpiles of soil that contained chlorides above 1,000 ppm were to be transported to GMI for proper disposal. Robinson ripped the bottom as much as was practicable and began the backfill and compaction operation on August 12, 2011. Robinson completed the backfill, compaction, and contouring on about December 26, 2011 (Appendix A, Photos 27-30). In March of 2012, the location was seeded with the prescribed seed mix applied with a mechanical seed drill at a rate of 8-12 pounds pure live seed per acre. Seeding was supplemented as necessary by hand broadcast in areas with restricted machinery access. OCD Form C-144 is presented in Appendix C.

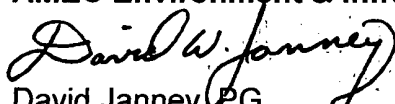
DISCUSSION

Bedrock and soil with chloride concentrations above the regulatory limit of 1,000 ppm remained in place in the central and western cells of the pit. All of the other analyte concentrations were below the regulatory limits. Bedrock in the bottom of the excavation was ripped as much as practicable, and mixed with clean soil from the stockpile. The remainder of the clay-rich, low permeability, clean soil stockpile was placed and compacted in the excavation. Based on drilling of five nearby water wells, depth to groundwater at the location is greater than 300 feet; therefore, the pit closure described above is protective of human health and the environment.


LIMITATIONS

The scope of work for this report is intended to provide documentation of the Webb 3-23 completion pit closure process in relation to the removal of fluid, mud, and soil/rock. This work was performed in a manner consistent with that level of care and skill ordinarily exercised by other members of AMEC's profession practicing in the same locality, under similar conditions and at the date the services are provided. Any conclusions, opinions and recommendations are based on a limited number of observations and data. It is possible that conditions could vary between or beyond the data evaluated. AMEC makes no other representation, guarantee or warranty, express or implied, regarding the services, communication (oral or written), report, opinion, or instrument of service provided.

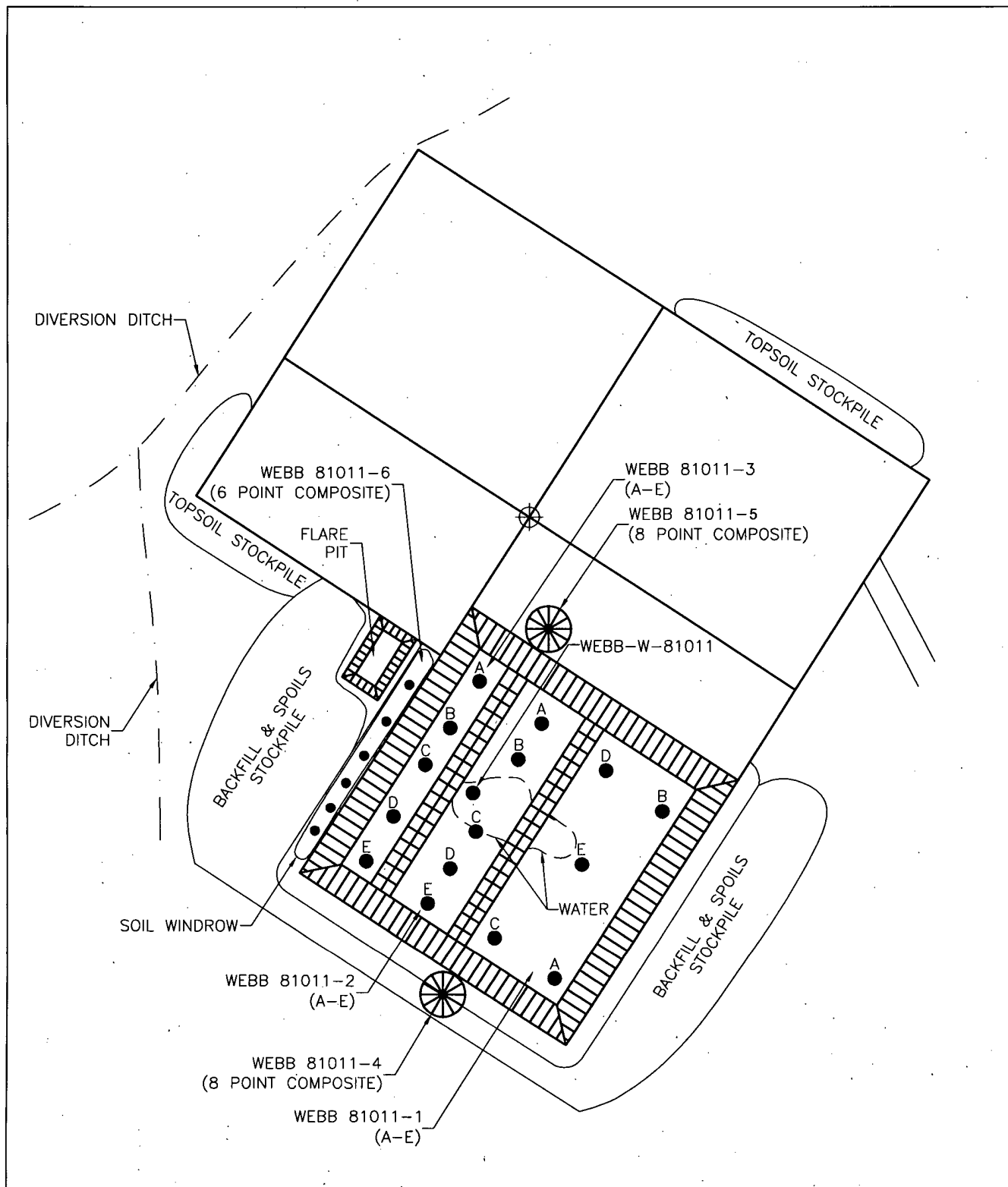
Respectfully submitted,
AMEC Environment & Infrastructure, Inc.


David Janney, P.G.
Project Manager

Reviewed by:


Dan Kwiecinski, PE
Branch Manager

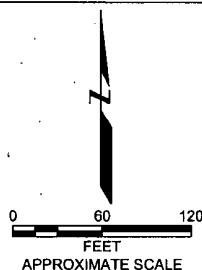
FIGURES



SOURCE: AMEC Field Sketch

EXPLANATION:

- A SAMPLE POINT
- ⊕ GAS WELL



SAMPLE LOCATION MAP
 Webb Ranch #3-23
 Shell Exploration & Production
 Section 23, Township 11N, Range 23E
 Guadalupe County, NM

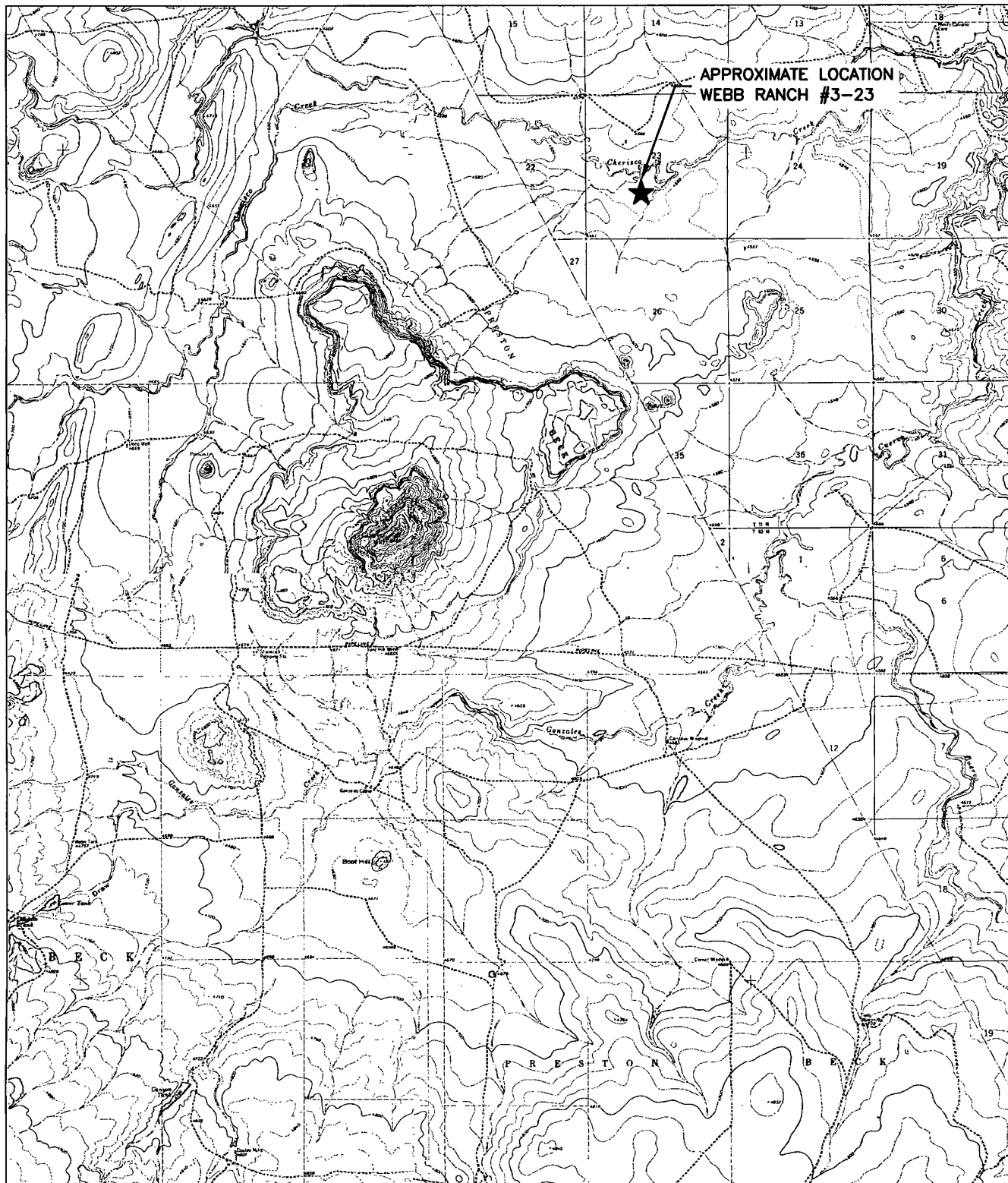
By: BAL

Date: 12/14/11

Project No. HO10160210

amec

Figure 2

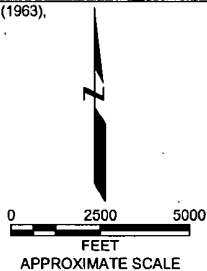


SOURCE: USGS 7.5 MINUTE MESITA DEL GATO, NM QUADRANGLE (1963),
 USGS 7.5 MINUTE CUERVO, NM QUADRANGLE (1963),
 USGS 7.5 MINUTE SACATON DRAW, NM QUADRANGLE (1963),
 AND USGS 7.5 MINUTE MESA CHERISCO, NM QUADRANGLE (1963).

EXPLANATION:



APPROXIMATE SITE LOCATION



SITE LOCATION MAP

Webb Ranch #3-23

Shell Exploration & Production
 Section 23, Township 11N, Range 23E
 Guadalupe County, NM

By: BAL

Date: 12/14/11

Project No. HO10160210



Figure 1

TABLES

Table 1
Webb Ranch 3-23 Completion Pit Analytical Summary
Guadalupe County, New Mexico

Sample Number	Date Collected	Matrix	Gasoline Range Organics EPA Method 8015B	Diesel Range Organics EPA Method 8015B	Motor Oil Range Organics EPA Method 8015B	Volatiles B, T, E, X EPA Method 8021B				Total Petroleum Hydrocarbons EPA Method 418.1	Chloride	Comments
WEBB 81011-1	8/10/11	soil	< 4.9	21	< 50	< 0.049, < 0.049, < 0.049, < 0.099				51	930	east cell
WEBB 81011-2	8/10/11	soil	< 4.7	< 10	< 51	< 0.047, < 0.047, < 0.047, < 0.094				< 20	1700	center cell
WEBB 81011-3	8/10/11	soil	< 4.6	< 10	< 50	< 0.046, < 0.046, < 0.046, < 0.093				< 20	6000	west cell
WEBB 81011-4	8/10/11	soil	< 4.6	< 9.9	< 50	< 0.046, < 0.046, < 0.046, < 0.091				< 20	7400	200 CY stockpile
WEBB 81011-5	8/10/11	soil	< 4.8	26	< 49	< 0.048, < 0.048, < 0.048, < 0.095				< 20	5900	150 CY stockpile
WEBB 81011-6	8/10/11	soil	< 5.0	62	< 50	< 0.050, < 0.050, < 0.050, < 0.10				43	14000	100 CY windrow
WEBB-W-81011	8/10/11	water	0.056	3.4	< 5.0	1.7,	2.2,	< 1.0,	< 2.0	< 1.0	55000	middle of center cell

NOTES:

All concentrations are in milligrams per kilogram (mg/Kg) for soil and µg/L for water

B = Benzene

CY = Cubic yards

E = Ethyl benzene

NA = Not analyzed

T = Toluene

X = Xylenes

APPENDIX A
Photographic Log



Photo 1. East cell of pit prior to removal of fluid and mud (looking southwest).



Photo 2. Center cell of pit prior to removal of fluid and mud (looking south).



Photo 3. West cell of pit prior to removal of fluid and mud (looking south).



Photo 4. Beginning of liner removal from the east cell of pit (looking southeast).



Photo 5. Liner removed from east cell of pit and ready for sampling (looking northwest).

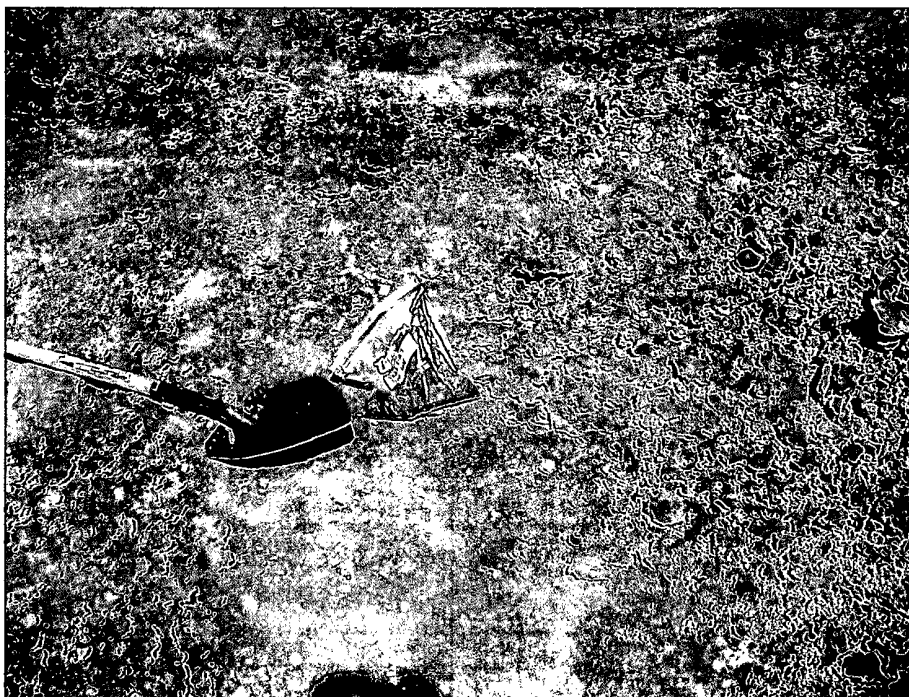


Photo 6. Sample location Webb 81011-1A (looking southwest).



Photo 7. Sample location Webb 81011-1B (looking west).



Photo 8. Sample location Webb 81011-1C (looking northwest).

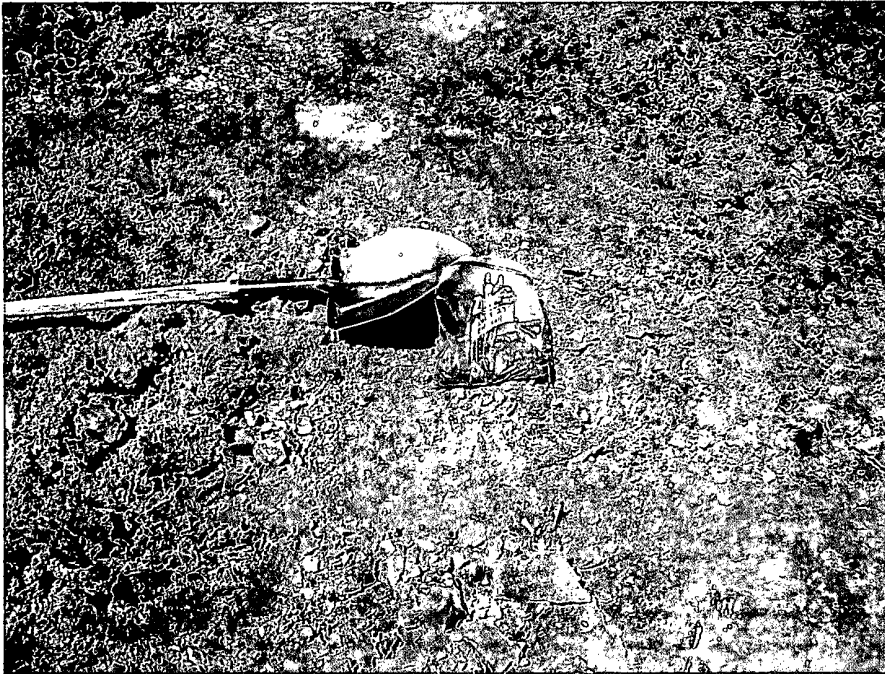


Photo 9. Sample location Webb 81011-1D (looking northwest).



Photo 10. Sample location Webb 81011-1E (looking southeast).

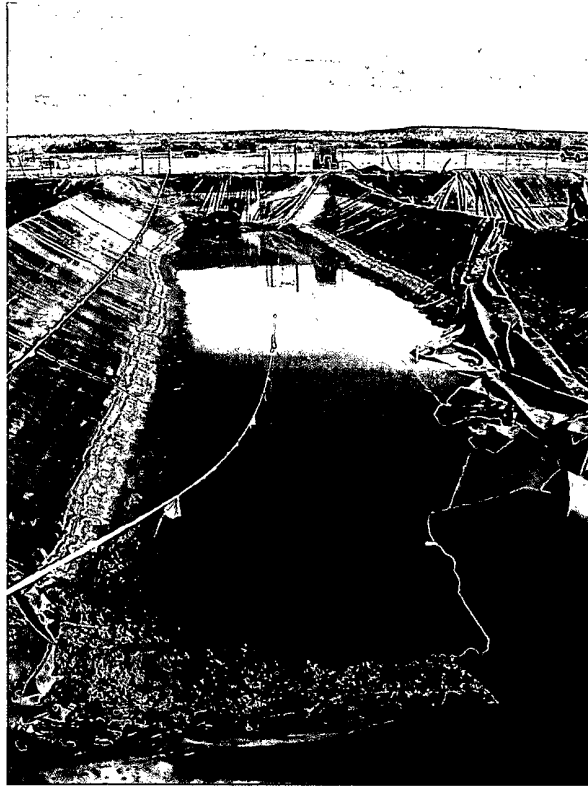


Photo 11: Beginning liner removal from center cell of pit (looking north).



Photo 12: Liner removed from the center cell of pit and nearly ready for sampling (looking south).



Photo 13. Sample location Webb 81011-2A (looking southwest).



Photo 14. Sample location Webb 81011-2B (looking west).



Photo 15. Sample location Webb 81011-2C (looking west).



Photo 16. Sample location Webb 81011-2D (looking west).

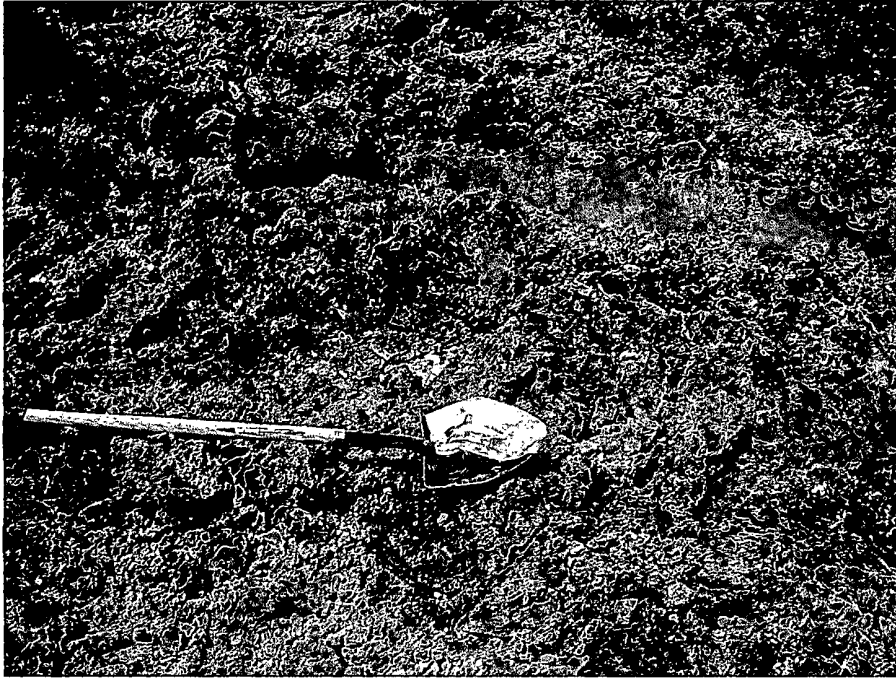


Photo 17. Sample location Webb 81011-2E (looking west).

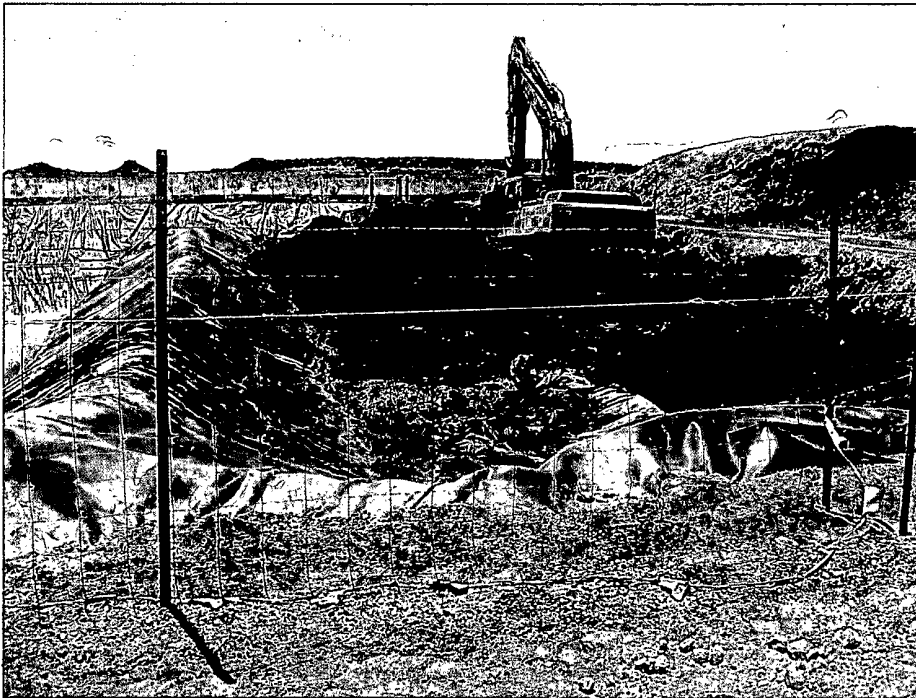


Photo 18. Beginning liner removal from west cell of pit (looking south).



Photo 19. Liner removed from west cell of pit and ready for sampling (looking south).

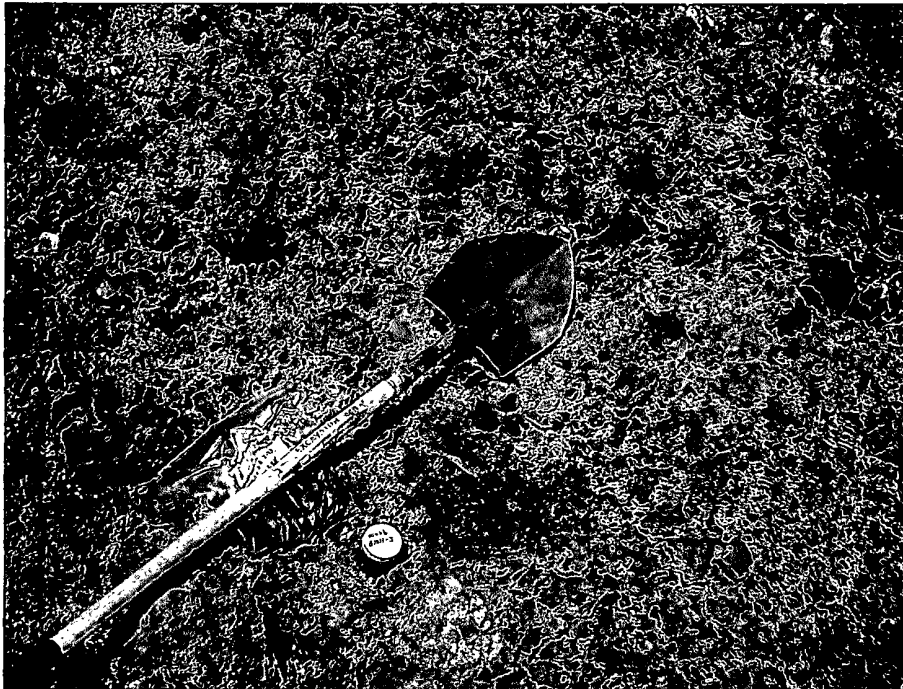


Photo 20. Sample location Webb 81011-3A (looking northwest).



Photo 21. Sample location Webb 81011-3B (looking north).

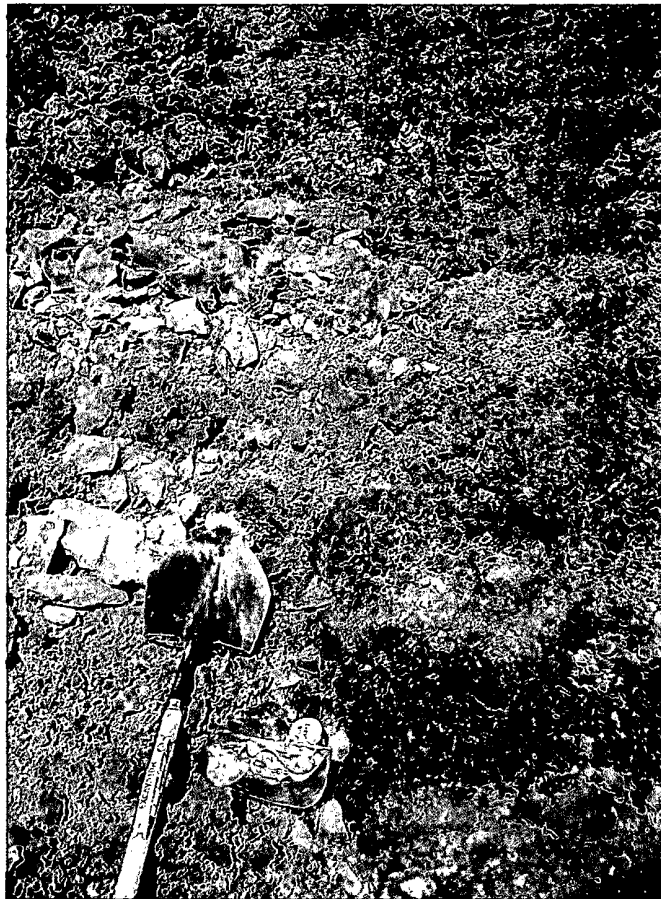


Photo 22. Sample location Webb 81011-3C (looking north).



Photo 23. Sample location Webb 81011-3D (looking northwest).



Photo 24. Sample location Webb 81011-3E (looking west).

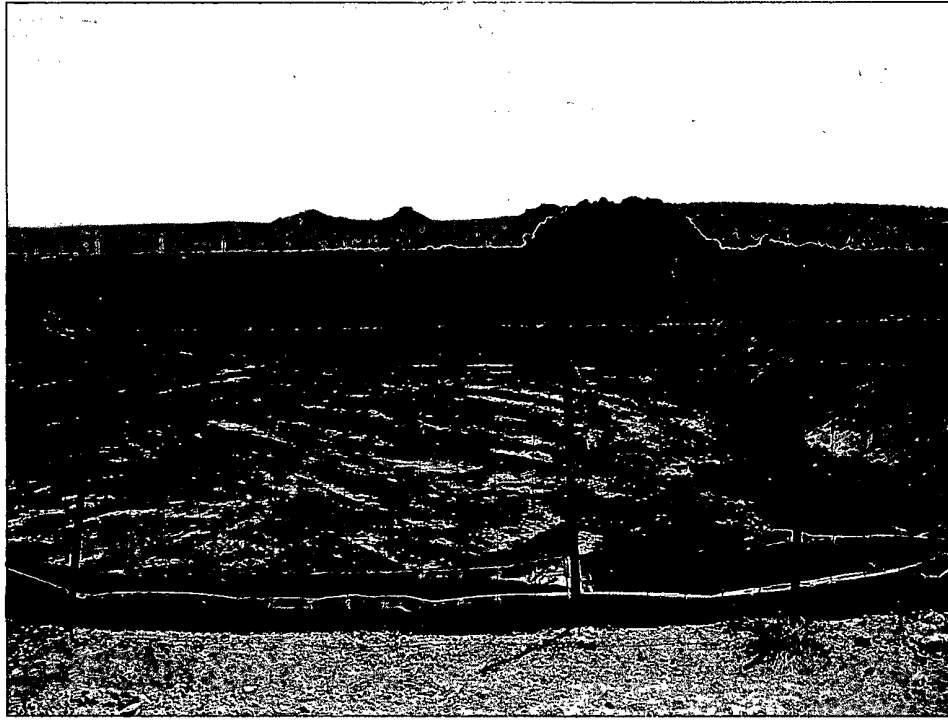


Photo 25. Stockpile with 200 yards, sample location Webb 81011-4 (looking south).

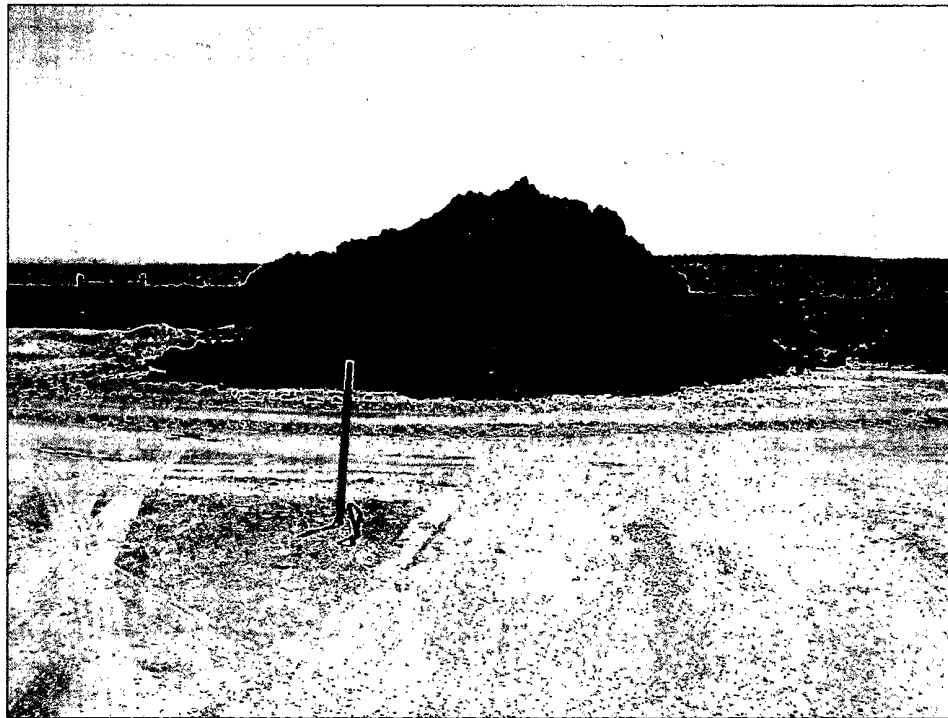


Photo 26. Stockpile with 150 yards, sample location Webb 81011-5, note soil windrow on far right of photo where composite sample 81011-6 was collected (looking south).



Photo 27. Backfill and compaction nearly completed (looking east northeast).

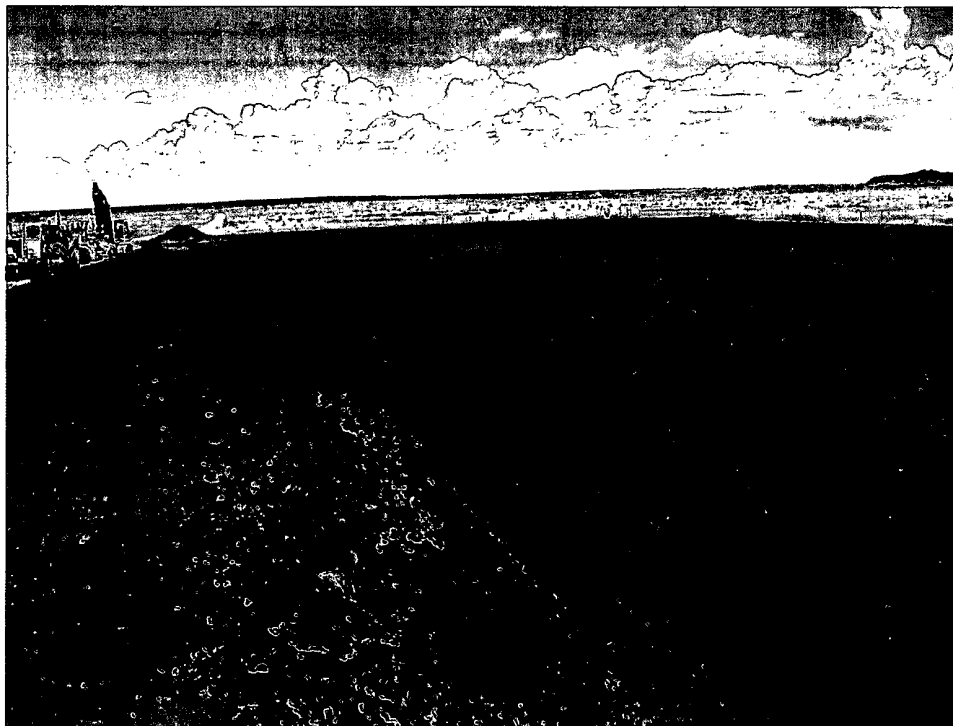


Photo 28. Backfill and compaction nearly completed (looking east).



Photo 29. Backfill and compaction completed ready for final grading (looking southwest).



Photo 30. Backfill and compaction completed (looking northeast).

APPENDIX B

Laboratory Analytical Results, QA/QC, and Chains-of-Custody



COVER LETTER

Friday, August 12, 2011

David Janney
AMEC
8519 Jefferson Street, NE
Albuquerque, NM 87113

TEL: () 449-8487
FAX (505) 821-7371

RE: Shell Cuervo

Order No.: 1108463

Dear David Janney:

Hall Environmental Analysis Laboratory, Inc. received 7 sample(s) on 8/10/2011 for the analyses presented in the following report.

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

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

Sincerely,

for Andy Freeman
for Andy Freeman, Laboratory Manager

NM Lab # NM9425 NM0901
AZ license # AZ0682



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

CLIENT: AMEC

Project: Shell Cuervo

Lab Order: 1108463

CASE NARRATIVE

Analytical Notes regarding Chloride in water:

The chloride result in water is an estimated value.

Hall Environmental Analysis Laboratory, Inc.

Date: 12-Aug-11

Analytical Report

CLIENT: AMEC
Lab Order: 1108463
Project: Shell Cuervo
Lab ID: 1108463-01

Client Sample ID: Webb-81011-1
Collection Date: 8/10/2011 12:00:00 PM
Date Received: 8/10/2011
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	21	10		mg/Kg	1	8/11/2011 9:19:27 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/11/2011 9:19:27 PM
Surr: DNOP	87.6	73.4-123		%REC	1	8/11/2011 9:19:27 PM
EPA METHOD 8016B: GASOLINE RANGE						Analyst: DAM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/11/2011 8:53:34 PM
Surr: BFB	95.0	75.2-136		%REC	1	8/11/2011 8:53:34 PM
EPA METHOD 8021B: VOLATILES						Analyst: DAM
Benzene	ND	0.049		mg/Kg	1	8/11/2011 8:53:34 PM
Toluene	ND	0.049		mg/Kg	1	8/11/2011 8:53:34 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/11/2011 8:53:34 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/11/2011 8:53:34 PM
EPA METHOD 300.0: ANIONS						Analyst: SRM
Chloride	930	150		mg/Kg	100	8/11/2011 3:08:15 PM
EPA METHOD 418.1: TPH						Analyst: JB
Petroleum Hydrocarbons, TR	51	20		mg/Kg	1	8/12/2011

Qualifiers:

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

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

Page 1 of 7

Hall Environmental Analysis Laboratory, Inc.

Date: 12-Aug-11

Analytical Report

CLIENT: AMEC

Client Sample ID: Webb-81011-2

Lab Order: 1108463

Collection Date: 8/10/2011 12:00:00 PM

Project: Shell Cuervo

Date Received: 8/10/2011

Lab ID: 1108463-02

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/11/2011 11:37:01 PM
Motor Oil Range Organics (MRO)	ND	51		mg/Kg	1	8/11/2011 11:37:01 PM
Surr: DNOP	86.2	73.4-123		%REC	1	8/11/2011 11:37:01 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: DAM
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/11/2011 9:22:26 PM
Surr: BFB	94.7	75.2-136		%REC	1	8/11/2011 9:22:26 PM
EPA METHOD 8021B: VOLATILES						Analyst: DAM
Benzene	ND	0.047		mg/Kg	1	8/11/2011 9:22:26 PM
Toluene	ND	0.047		mg/Kg	1	8/11/2011 9:22:26 PM
Ethylbenzene	ND	0.047		mg/Kg	1	8/11/2011 9:22:26 PM
Xylenes, Total	ND	0.094		mg/Kg	1	8/11/2011 9:22:26 PM
EPA METHOD 300.0: ANIONS						Analyst: SRM
Chloride	1700	150		mg/Kg	100	8/11/2011 3:43:04 PM
EPA METHOD 418.1: TPH						Analyst: JB
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	8/12/2011

Qualifiers:

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

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

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Hall Environmental Analysis Laboratory, Inc.

Date: 12-Aug-11

Analytical Report

CLIENT: AMEC
Lab Order: 1108463
Project: Shell Cuervo
Lab ID: 1108463-03

Client Sample ID: Webb-81011-3
Collection Date: 8/10/2011 12:30:00 PM
Date Received: 8/10/2011
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/12/2011 12:11:23 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/12/2011 12:11:23 AM
Surr: DNOP	74.5	73.4-123		%REC	1	8/12/2011 12:11:23 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: DAM
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/11/2011 9:51:22 PM
Surr: BFB	94.2	75.2-136		%REC	1	8/11/2011 9:51:22 PM
EPA METHOD 8021B: VOLATILES						Analyst: DAM
Benzene	ND	0.046		mg/Kg	1	8/11/2011 9:51:22 PM
Toluene	ND	0.046		mg/Kg	1	8/11/2011 9:51:22 PM
Ethylbenzene	ND	0.046		mg/Kg	1	8/11/2011 9:51:22 PM
Xylenes, Total	ND	0.093		mg/Kg	1	8/11/2011 9:51:22 PM
EPA METHOD 300.0: ANIONS						Analyst: SRM
Chloride	6000	150		mg/Kg	100	8/11/2011 4:17:55 PM
EPA METHOD 418.1: TPH						Analyst: JB
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	8/12/2011

Qualifiers:

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

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

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Hall Environmental Analysis Laboratory, Inc.**Date: 12-Aug-11**
Analytical Report**CLIENT:** AMEC
Lab Order: 1108463
Project: Shell Cuervo
Lab ID: 1108463-04**Client Sample ID:** Webb-81011-4
Collection Date: 8/10/2011 1:00:00 PM
Date Received: 8/10/2011
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	8/12/2011 12:45:46 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/12/2011 12:45:46 AM
Surr: DNOP	81.8	73.4-123		%REC	1	8/12/2011 12:45:46 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: DAM
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/11/2011 10:20:10 PM
Surr: BFB	94.2	75.2-136		%REC	1	8/11/2011 10:20:10 PM
EPA METHOD 8021B: VOLATILES						Analyst: DAM
Benzene	ND	0.048		mg/Kg	1	8/11/2011 10:20:10 PM
Toluene	ND	0.046		mg/Kg	1	8/11/2011 10:20:10 PM
Ethylbenzene	ND	0.046		mg/Kg	1	8/11/2011 10:20:10 PM
Xylenes, Total	ND	0.091		mg/Kg	1	8/11/2011 10:20:10 PM
EPA METHOD 300.0: ANIONS						Analyst: SRM
Chloride	7400	1500		mg/Kg	1000	8/11/2011 5:10:09 PM
EPA METHOD 418.1: TPH						Analyst: JB
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	8/12/2011

Qualifiers:

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

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

Page 4 of 7

Hall Environmental Analysis Laboratory, Inc.

Date: 12-Aug-11

Analytical Report

CLIENT: AMEC
Lab Order: 1108463
Project: Shell Cuervo
Lab ID: 1108463-05

Client Sample ID: Webb-81011-5
Collection Date: 8/10/2011 1:15:00 PM
Date Received: 8/10/2011
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	26	9.8		mg/Kg	1	8/12/2011 1:20:10 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/12/2011 1:20:10 AM
Surr: DNOP	88.5	73.4-123		%REC	1	8/12/2011 1:20:10 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: DAM
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/11/2011 10:49:00 PM
Surr: BFB	94.7	75.2-136		%REC	1	8/11/2011 10:49:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: DAM
Benzene	ND	0.048		mg/Kg	1	8/11/2011 10:49:00 PM
Toluene	ND	0.048		mg/Kg	1	8/11/2011 10:49:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/11/2011 10:49:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	8/11/2011 10:49:00 PM
EPA METHOD 300.0: ANIONS						Analyst: SRM
Chloride	5900	150		mg/Kg	100	8/11/2011 6:02:23 PM
EPA METHOD 418.1: TPH						Analyst: JB
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	8/12/2011

Qualifiers:

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

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

Page 5 of 7

Hall Environmental Analysis Laboratory, Inc.

Date: 12-Aug-11

Analytical Report

CLIENT: AMEC
Lab Order: 1108463
Project: Shell Cuervo
Lab ID: 1108463-06

Client Sample ID: Webb-81011-6
Collection Date: 8/10/2011 1:30:00 PM
Date Received: 8/10/2011
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	62	10		mg/Kg	1	8/12/2011 1:54:33 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/12/2011 1:54:33 AM
Surr: DNOP	77.0	73.4-123		%REC	1	8/12/2011 1:54:33 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: DAM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/11/2011 11:17:48 PM
Surr: BFB	99.0	75.2-136		%REC	1	8/11/2011 11:17:48 PM
EPA METHOD 8021B: VOLATILES						Analyst: DAM
Benzene	ND	0.050		mg/Kg	1	8/11/2011 11:17:48 PM
Toluene	ND	0.050		mg/Kg	1	8/11/2011 11:17:48 PM
Ethylbenzene	ND	0.050		mg/Kg	1	8/11/2011 11:17:48 PM
Xylenes, Total	ND	0.10		mg/Kg	1	8/11/2011 11:17:48 PM
EPA METHOD 300.0: ANIONS						Analyst: SRM
Chloride	14000	1500		mg/Kg	1000	8/11/2011 6:54:38 PM
EPA METHOD 418.1: TPH						Analyst: JB
Petroleum Hydrocarbons, TR	43	20		mg/Kg	1	8/12/2011

Qualifiers:

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

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

Page 6 of 7

Hall Environmental Analysis Laboratory, Inc.

Date: 12-Aug-11

Analytical Report

CLIENT:	AMEC	Client Sample ID:	Webb-W-81011
Lab Order:	1108463	Collection Date:	8/10/2011 11:00:00 AM
Project:	Shell Cuervo	Date Received:	8/10/2011
Lab ID:	1108463-07	Matrix:	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: JB
Diesel Range Organics (DRO)	3.4	1.0		mg/L	1	8/11/2011 7:00:52 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/11/2011 7:00:52 PM
Surr: DNOP	97.4	81.1-147		%REC	1	8/11/2011 7:00:52 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: DAM
Gasoline Range Organics (GRO)	0.056	0.050		mg/L	1	8/11/2011 10:36:28 PM
Surr: BFB	85.5	65.4-141		%REC	1	8/11/2011 10:36:28 PM
EPA METHOD 8021B: VOLATILES						Analyst: DAM
Benzene	1.7	1.0		µg/L	1	8/11/2011 10:36:28 PM
Toluene	2.2	1.0		µg/L	1	8/11/2011 10:36:28 PM
Ethylbenzene	ND	1.0		µg/L	1	8/11/2011 10:36:28 PM
Xylenes, Total	ND	2.0		µg/L	1	8/11/2011 10:36:28 PM
EPA METHOD 300.0: ANIONS						Analyst: SRM
Chloride	55000	2500	E	mg/L	5000	8/11/2011 5:27:30 PM
EPA METHOD 418.1: TPH						Analyst: JB
Petroleum Hydrocarbons, TR	ND	1.0		mg/L	1	8/12/2011

Qualifiers:

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

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

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QA/QC SUMMARY REPORT

Client: AMEC
Project: Shell Cuervo

Work Order: 1108463

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 300.0: Anions											
Sample ID: MB-28009		MBLK				Batch ID: 28009		Analysis Date: 8/11/2011 2:33:25 PM			
Chloride	ND	mg/Kg	1.5								
Sample ID: LCS-28009		LCS				Batch ID: 28009		Analysis Date: 8/11/2011 2:50:50 PM			
Chloride	14.28	mg/Kg	1.5	15	0	95.2	90	110			
Method: EPA Method 300.0: Anions											
Sample ID: MB		MBLK				Batch ID: R47126		Analysis Date: 8/11/2011 1:42:54 PM			
Chloride	ND	mg/L	0.50								
Sample ID: LCS		LCS				Batch ID: R47126		Analysis Date: 8/11/2011 1:54:07 PM			
Chloride	4.781	mg/L	0.50	5	0	95.6	90	110			
Method: EPA Method 418.1: TPH											
Sample ID: MB-28003		MBLK				Batch ID: 28003		Analysis Date: 8/12/2011			
Petroleum Hydrocarbons, TR	ND	mg/Kg	20								
Sample ID: LCS-28003		LCS				Batch ID: 28003		Analysis Date: 8/12/2011			
Petroleum Hydrocarbons, TR	100.3	mg/Kg	20	100	0	100	87.8	115			
Sample ID: LCSD-28003		LCSD				Batch ID: 28003		Analysis Date: 8/12/2011			
Petroleum Hydrocarbons, TR	100.3	mg/Kg	20	100	0	100	87.8	115	0	8.04	
Method: EPA Method 418.1: TPH											
Sample ID: MB-28017		MBLK				Batch ID: 28017		Analysis Date: 8/12/2011			
Petroleum Hydrocarbons, TR	ND	mg/L	1.0								
Sample ID: LCS-28017		LCS				Batch ID: 28017		Analysis Date: 8/12/2011			
Petroleum Hydrocarbons, TR	4.880	mg/L	1.0	5	0	97.6	79.6	110			
Sample ID: LCSD-28017		LCSD				Batch ID: 28017		Analysis Date: 8/12/2011			
Petroleum Hydrocarbons, TR	4.820	mg/L	1.0	5	0	96.4	79.6	110	1.24	13.3	
Method: EPA Method 8015B: Diesel Range Organics											
Sample ID: 1108463-01AMSD		MSD				Batch ID: 28002		Analysis Date: 8/11/2011 11:02:35 PM			
Diesel Range Organics (DRO)	49.50	mg/Kg	10	50.1	21.15	56.6	61.9	125	31.5	22.3	SR
Sample ID: MB-28002		MBLK				Batch ID: 28002		Analysis Date: 8/11/2011 7:35:31 PM			
Diesel Range Organics (DRO)	ND	mg/Kg	10								
Motor Oil Range Organics (MRO)	ND	mg/Kg	50								
Sample ID: LCS-28002		LCS				Batch ID: 28002		Analysis Date: 8/11/2011 8:10:11 PM			
Diesel Range Organics (DRO)	42.18	mg/Kg	10	50	0	84.4	66.7	119			
Sample ID: LCSD-28002		LCSD				Batch ID: 28002		Analysis Date: 8/11/2011 8:44:48 PM			
Diesel Range Organics (DRO)	45.37	mg/Kg	10	50	0	90.7	66.7	119	7.27	18.9	
Sample ID: 1108463-01AMS		MS				Batch ID: 28002		Analysis Date: 8/11/2011 9:53:50 PM			
Diesel Range Organics (DRO)	67.98	mg/Kg	10	49.95	21.15	93.8	61.9	125			

Qualifiers:

E Estimated value
J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit

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

Page 1

QA/QC SUMMARY REPORT

Client: AMEC
Project: Shell Cuervo

Work Order: 1108463

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range											
Sample ID: MB-28006		MBLK									
Diesel Range Organics (DRO)	ND	mg/L	1.0								
Motor Oil Range Organics (MRO)	ND	mg/L	5.0								
Sample ID: LCS-28006		LCS									
Diesel Range Organics (DRO)	5.208	mg/L	1.0	5	0	104	74	157			
Sample ID: LCSD-28006		LCSD									
Diesel Range Organics (DRO)	5.777	mg/L	1.0	5	0	116	74	157	10.4	23	
Method: EPA Method 8015B: Gasoline Range											
Sample ID: 1108463-01A MSD		MSD									
Gasoline Range Organics (GRO)	32.33	mg/Kg	4.7	23.56	0	137	72.4	149	15.3	19.2	
Sample ID: MB-28001		MBLK									
Gasoline Range Organics (GRO)	ND	mg/Kg	5.0								
Sample ID: LCS-28001		LCS									
Gasoline Range Organics (GRO)	29.70	mg/Kg	5.0	25	0	119	86.4	132			
Sample ID: 1108463-01A MS		MS									
Gasoline Range Organics (GRO)	37.69	mg/Kg	4.8	24.08	0	156	72.4	149			S
Method: EPA Method 8015B: Gasoline Range											
Sample ID: 6ML-RB		MBLK									
Gasoline Range Organics (GRO)	ND	mg/L	0.050								
Sample ID: 2.5UG GRO LCS		LCS									
Gasoline Range Organics (GRO)	0.5350	mg/L	0.050	0.5	0	107	92.1	117			

Qualifiers:

E Estimated value
J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit

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

QA/QC SUMMARY REPORT

Client: AMEC
Project: Shell Cuervo

Work Order: 1108463

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8021B: Volatiles

Sample ID: 1108463-02A MSD

MSD

Batch ID: 28001

Analysis Date: 8/12/2011 1:13:08 AM

Benzene	0.9218	mg/Kg	0.046	0.912	0	101	67.2	113	4.03	14.3	
Toluene	0.9650	mg/Kg	0.046	0.912	0	106	62.1	116	5.83	15.9	
Ethylbenzene	0.9864	mg/Kg	0.046	0.912	0	108	67.9	127	5.41	14.4	
Xylenes, Total	2.994	mg/Kg	0.091	2.737	0	109	60.6	134	7.26	12.6	

Sample ID: MB-28001

MBLK

Batch ID: 28001

Analysis Date: 8/12/2011 2:39:38 AM

Benzene	ND	mg/Kg	0.050								
Toluene	ND	mg/Kg	0.050								
Ethylbenzene	ND	mg/Kg	0.050								
Xylenes, Total	ND	mg/Kg	0.10								

Sample ID: LCS-28001

LCS

Batch ID: 28001

Analysis Date: 8/12/2011 2:10:51 AM

Benzene	0.9481	mg/Kg	0.050	1	0	94.8	83.3	107			
Toluene	1.032	mg/Kg	0.050	1	0	103	74.3	115			
Ethylbenzene	1.055	mg/Kg	0.050	1	0	105	80.9	122			
Xylenes, Total	3.190	mg/Kg	0.10	3	0	106	85.2	123			

Sample ID: 1108463-02A MS

MS

Batch ID: 28001

Analysis Date: 8/12/2011 12:44:19 AM

Benzene	0.9598	mg/Kg	0.048	0.96	0	100	67.2	113			
Toluene	1.023	mg/Kg	0.048	0.96	0	107	62.1	116			
Ethylbenzene	1.041	mg/Kg	0.048	0.96	0	108	67.9	127			
Xylenes, Total	3.220	mg/Kg	0.096	2.879	0	112	60.6	134			

Method: EPA Method 8021B: Volatiles

Sample ID: 5ML-RB

MBLK

Batch ID: R47116

Analysis Date: 8/11/2011 7:45:26 AM

Benzene	ND	µg/L	1.0								
Toluene	ND	µg/L	1.0								
Ethylbenzene	ND	µg/L	1.0								
Xylenes, Total	ND	µg/L	2.0								

Sample ID: 100NG BTEX LCS

LCS

Batch ID: R47116

Analysis Date: 8/11/2011 10:15:49 AM

Benzene	18.75	µg/L	1.0	20	0	93.7	80	120			
Toluene	19.20	µg/L	1.0	20	0	96.0	80	120			
Ethylbenzene	18.49	µg/L	1.0	20	0	92.5	80	120			
Xylenes, Total	56.96	µg/L	2.0	60	0	94.9	80	120			

Qualifiers:

E Estimated value
J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit

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

Page 3

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name AMEC

Date Received:

8/10/2011

Work Order Number 1108463

Received by: AT

Sample ID labels checked by:

Checklist completed by:

Signature

8/10/11

Date

Initials

Matrix:

Carrier name: Client drop-off

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☐

No ☐

Not Present ☐

Not Shipped ☒

Custody seals intact on sample bottles?

Yes ☐

No ☐

N/A ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Water - VOA vials have zero headspace?

No VOA vials submitted ☐

Yes ☒

No ☐

Water - Preservation labels on bottle and cap match?

Yes ☐

No ☒

N/A ☒

Water - pH acceptable upon receipt?

Yes ☐

No ☒

N/A ☒

Container/Temp Blank temperature?

24.3°

<6° C Acceptable

If given sufficient time to cool.

Number of preserved bottles checked for pH:

<2 >12 unless noted below.

COMMENTS:

Client contacted

Date contacted:

Person contacted

Contacted by:

Regarding:

Comments:

added 6 mls HCl to 1x 1tr Amber for acceptable pH / K 8/11/11

Corrective Action

Chain-of-Custody Record

Client: AMEC

Mailing Address: 8519 Jefferson NE
Albuquerque, NM 87113

Phone #: 505.821.1801

email or Fax#: david.journey@amec.com

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☐ Standard ☒ Rush 24 hr TAT

Project Name: Shell Cuervo

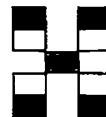
Project #: 4010160210.04

Project Manager: David Janney

Sampler: David Janney

On Ice: ☐ Yes ☒ No

Sample Temperature: 24.3



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEALS No.	BTEX + MTBE	BTEX + MTBE + IMB's (8024)	TPH Method 8015B (Gas/Diesel) (8024)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Chloride	Air Bubbles	
8/10/11		Soil	Webb-81011-1	402-1	Noap	11084606	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	1200		Webb 81011-2	402-1		2	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	1230		Webb 81011-3	402-1		3	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	1300		Webb 81011-4	402-1		4	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	1315		Webb 81011-5	402-1		5	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	1330	↓	Webb 81011-6	402-1	↓	6	/	/	/	/	/	/	/	/	/	/	/	/	/	/
↓	1100	water	Webb-W-81011	5-40ml-H ₂ O-HCC 1-L water sample	HCC None	7	/	/	/	/	/	/	/	/	/	/	/	/	/	/
																		</		

Date: 08/10/11 Time: 1704 Relinquished by: David W. Janney

Date: _____ Time: _____ Relinquished by: _____

Received by: [Signature] Date: 08/10/11 Time: 1704

Received by: _____ Date: _____ Time: _____

Remarks: Samples contain high Chlorides perhaps > 7,000 ppm

APPENDIX C
OCD Form C-144

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
Department
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-144
Revised August 1, 2011

For temporary pits, closed-loop systems, and below-grade tanks, submit to the appropriate NMOCD District Office.
For permanent pits and exceptions submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

**Pit, Closed-Loop System, Below-Grade Tank, or
Proposed Alternative Method Permit or Closure Plan Application**

Type of action: ☐ Permit of a pit, closed-loop system, below-grade tank, or proposed alternative method
☒ Closure of a pit, closed-loop system, below-grade tank, or proposed alternative method
☐ Modification to an existing permit
☐ Closure plan only submitted for an existing permitted or non-permitted pit, closed-loop system, below-grade tank, or proposed alternative method

Instructions: Please submit one application (Form C-144) per individual pit, closed-loop system, below-grade tank or alternative request

Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

1.
Operator: SWEPI LP OGRID #: 250036
Address: P.O. Box 567, Houston, TX 77001 (Local contact: Shell Explor. and Prod. Co. 4582 S Ulster Pkwy., Suite 1400, Denver, CO 80237)
Facility or well name: Webb 3-23 (Completion Pit Closure)
API Number: 3001920135 OCD Permit Number: _____
U/L or Qtr/Qtr K Section 23 Township 11N Range 23E County: Guadalupe
Center of Proposed Design: Latitude 35.162369 Longitude 104.472511 NAD: ☐ 1927 ☒ 1983
Surface Owner: ☐ Federal ☐ State ☒ Private ☐ Tribal Trust or Indian Allotment

2.
☐ **Pit:** Subsection F or G of 19.15.17.11 NMAC
Temporary: ☐ Drilling ☐ Workover
☐ Permanent ☐ Emergency ☐ Cavitation ☐ P&A
☐ Lined ☐ Unlined Liner type: Thickness _____ mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other _____
☐ String-Reinforced
Liner Seams: ☐ Welded ☐ Factory ☐ Other _____ Volume: _____ bbl Dimensions: L _____ x W _____ x D _____

3.
☐ **Closed-loop System:** Subsection H of 19.15.17.11 NMAC
Type of Operation: ☐ P&A ☐ Drilling a new well ☐ Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent)
☐ Drying Pad ☐ Above Ground Steel Tanks ☐ Haul-off Bins ☐ Other _____
☐ Lined ☐ Unlined Liner type: Thickness _____ mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other _____
Liner Seams: ☐ Welded ☐ Factory ☐ Other _____

4.
☐ **Below-grade tank:** Subsection I of 19.15.17.11 NMAC
Volume: _____ bbl Type of fluid: _____
Tank Construction material: _____
☐ Secondary containment with leak detection ☐ Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off
☐ Visible sidewalls and liner ☐ Visible sidewalls only ☐ Other _____
Liner type: Thickness _____ mil ☐ HDPE ☐ PVC ☐ Other _____

5.
☐ **Alternative Method:** Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

6.

Fencing: Subsection D of 19.15.17.11 NMAC (*Applies to permanent pits, temporary pits, and below-grade tanks*)

- ☐ Chain link, six feet in height, two strands of barbed wire at top (*Required if located within 1000 feet of a permanent residence, school, hospital, institution or church*)
- ☐ Four foot height, four strands of barbed wire evenly spaced between one and four feet
- ☐ Alternate. Please specify _____

7.

Netting: Subsection E of 19.15.17.11 NMAC (*Applies to permanent pits and permanent open top tanks*)

- ☐ Screen ☐ Netting ☐ Other _____
- ☐ Monthly inspections (If netting or screening is not physically feasible)

8.

Signs: Subsection C of 19.15.17.11 NMAC

- ☐ 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers
- ☐ Signed in compliance with 19.15.3.103 NMAC

9.

Administrative Approvals and Exceptions:

Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.

Please check a box if one or more of the following is requested, if not leave blank:

- ☐ Administrative approval(s): Requests must be submitted to the appropriate division district or the Santa Fe Environmental Bureau office for consideration of approval.
- ☐ Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

10.

Siting Criteria (regarding permitting): 19.15.17.10 NMAC

Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or above-grade tanks associated with a closed-loop system.

Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. (Applies to temporary, emergency, or cavitation pits and below-grade tanks) - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. (Applies to permanent pits) - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within a 100-year floodplain. - FEMA map	<input type="checkbox"/> Yes <input type="checkbox"/> No

11.

Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC**Instructions:** Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
- ☐ Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____ or Permit Number: _____

12.

Closed-loop Systems Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC**Instructions:** Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19.15.17.9
- ☐ Siting Criteria Compliance Demonstrations (only for on-site closure) - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____

☐ Previously Approved Operating and Maintenance Plan API Number: _____ (Applies only to closed-loop system that use above ground steel tanks or haul-off bins and propose to implement waste removal for closure)

13.

Permanent Pits Permit Application Checklist: Subsection B of 19.15.17.9 NMAC**Instructions:** Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Climatological Factors Assessment
- ☐ Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Quality Control/Quality Assurance Construction and Installation Plan
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Nuisance or Hazardous Odors, including H₂S, Prevention Plan
- ☐ Emergency Response Plan
- ☐ Oil Field Waste Stream Characterization
- ☐ Monitoring and Inspection Plan
- ☐ Erosion Control Plan
- ☐ Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

14.

Proposed Closure: 19.15.17.13 NMAC**Instructions:** Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.

Type: ☐ Drilling ☐ Workover ☐ Emergency ☐ Cavitation ☐ P&A ☐ Permanent Pit ☐ Below-grade Tank ☐ Closed-loop System

☐ Alternative – Temporary Completion Pit

Proposed Closure Method: ☐ Waste Excavation and Removal Temporary Completion Pit

☐ Waste Removal (Closed-loop systems only)

☐ On-site Closure Method (Only for temporary pits and closed-loop systems)

☐ In-place Burial ☐ On-site Trench Burial

☐ Alternative Closure Method (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)

15.

Waste Excavation and Removal Closure Plan Checklist: (19.15.17.13 NMAC) **Instructions:** Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
- ☐ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)
- ☐ Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC
- ☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

16.

Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: (19.15.17.13.D NMAC)**Instructions: Please identify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings. Use attachment if more than two facilities are required.**

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Will any of the proposed closed-loop system operations and associated activities occur on or in areas that *will not* be used for future service and operations?☐ Yes (If yes, please provide the information below) ☒ No*Required for impacted areas which will not be used for future service and operations:*☐ Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

17.

Siting Criteria (regarding on-site closure methods only): 19.15.17.10 NMAC**Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for guidance.**

Ground water is less than 50 feet below the bottom of the buried waste.

- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells

☐ Yes ☐ No☐ NA

Ground water is between 50 and 100 feet below the bottom of the buried waste

- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells

☐ Yes ☐ No☐ NA

Ground water is more than 100 feet below the bottom of the buried waste.

- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells

☐ Yes ☐ No☐ NA

Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).

- Topographic map; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.

- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image

☐ Yes ☐ No

Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application.

- NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended.

- Written confirmation or verification from the municipality; Written approval obtained from the municipality

☐ Yes ☐ No

Within 500 feet of a wetland.

- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

Within the area overlying a subsurface mine.

- Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division

☐ Yes ☐ No

Within an unstable area.

- Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map

☐ Yes ☐ No

Within a 100-year floodplain.

- FEMA map

☐ Yes ☐ No

18.

On-Site Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC☐ Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC☐ Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of 19.15.17.11 NMAC☐ Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - based upon the appropriate requirements of 19.15.17.11 NMAC☐ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC☐ Waste Material Sampling Plan - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC☐ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot be achieved)☐ Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

19.

Operator Application Certification:

I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

Name (Print): _____ Title: _____

Signature: _____ Date: _____

e-mail address: _____ Telephone: _____

20.

OCD Approval: ☐ Permit Application (including closure plan) ☐ Closure Plan (only) ☐ OCD Conditions (see attachment)

OCD Representative Signature: _____ **Approval Date:** _____

Title: _____ **OCD Permit Number:** _____

21.

Closure Report (required within 60 days of closure completion): Subsection K of 19.15.17.13 NMAC

Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.

☒ Closure Completion Date: 3/26/2012

22.

Closure Method:

☒ Waste Excavation and Removal ☐ On-Site Closure Method ☐ Alternative Closure Method ☐ Waste Removal (Closed-loop systems only)
☐ If different from approved plan, please explain.

23.

Closure Report Regarding Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only:

Instructions: Please identify the facility or facilities for where the liquids, drilling fluids and drill cuttings were disposed. Use attachment if more than two facilities were utilized.

Disposal Facility Name: Gandy-Marley, Inc. Tatum, NM Disposal Facility Permit Number: NM-711-1-0020

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Were the closed-loop system operations and associated activities performed on or in areas that *will not* be used for future service and operations?

☒ Yes (If yes, please demonstrate compliance to the items below) ☐ No

Required for impacted areas which will not be used for future service and operations:

- ☒ Site Reclamation (Photo Documentation)
☒ Soil Backfilling and Cover Installation
☒ Re-vegetation Application Rates and Seeding Technique

24.

Closure Report Attachment Checklist: Instructions: Each of the following items must be attached to the closure report. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Proof of Closure Notice (surface owner and division) – Not applicable
☐ Proof of Deed Notice (required for on-site closure) – Not applicable
☒ Plot Plan (for on-site closures and temporary pits) – See Figure 2 of Closure Report
☒ Confirmation Sampling Analytical Results (if applicable) - See Appendix B of Closure Report
☐ Waste Material Sampling Analytical Results (required for on-site closure)) – Not applicable
☒ Disposal Facility Name and Permit Number - Included in Box 23 above and in Closure Report
☒ Soil Backfilling and Cover Installation - Description and Photo Documentation included in Closure Report
☒ Re-vegetation Application Rates and Seeding Technique - Described in Closure Report
☒ Site Reclamation (Photo Documentation) - See Appendix A of Closure Report

On-site Closure Location: Latitude _____ Longitude _____ NAD: ☐ 1927 ☐ 1983

25.

Operator Closure Certification:

I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.

Name (Print): Michael L. Bergstrom Title: Regulatory Advisor

Signature:  Date: 4/23/2012

e-mail address: Michael.Bergstrom@shell.com Telephone: 303.222.6347