

3R - 71

REPORTS

DATE:

1999

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Oil Conservation Division

**BURLINGTON
RESOURCES**

SAN JUAN DIVISION

March 29, 2000

Certified: P 895 114 539

Bill Olson
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

**RE: 1999 Annual Groundwater Investigation and Remediation Reports
San Juan Basin, New Mexico**

Dear Mr. Olson:

As required in Burlington Resources' approved Groundwater Investigation and Remediation Plan dated August, 1998, enclosed are the 1999 annual reports for Burlington's groundwater impact sites in the San Juan Basin. Separate reports are enclosed for the following locations:

Cozzens B#1
Fogelson #4-1
Hampton #4M
Johnson Federal #4 Metering Station
Standard Oil Com. #1
Taylor Com. #2A

If you have questions or additional information is needed, please contact me at (505) 326-9841.

Sincerely,



Ed Hasely
Sr. Staff Environmental Representative

Attachments - Groundwater Investigation and Remediation Reports

cc: Denny Foust - NMOCD Aztec
Bruce Gantner - BR
PNM - Maureen Gannon (Cozzens B#1, Hampton #4M)
EPFS - Scott Pope (Fogelson #4-1, Johnson Fed. #4, Standard Oil Com.#1)
Facility Files
Correspondence

BURLINGTON RESOURCES

SAN JUAN DIVISION

July 29, 1999

Certified Mail: Z 186 732 886

Bill Olson
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

**RE: Johnson Federal #4 Metering Location
Unit Letter M, Section 27, Township 31N, Range 9W
Notification of Groundwater Impact**

Dear Mr. Olson:

As per the e-mail notification dated June 1, 1999 (Mr. Hasely to Mr. Olson), this letter is Burlington Resources' (BR) written notification of groundwater impact at the subject location. The final analytical results and final paperwork from the consultant did not make it to my attention until recently.

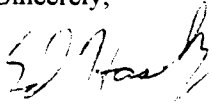
Due to El Paso having groundwater impacts at this location, BR conducted initial assessments of two earthen pits on the Johnson Federal #4 metering location. The separator pit tested clean and was closed. The tank drain earthen pit had levels above closure standards and BR excavated soils to 30 feet below ground surface. At that point, soil samples from the bottom of the excavation were collected and tested above pit closure standards. The excavation was sprayed with 20 barrels of Oxy-1 and backfilled with clean fill. BR conducted vertical extent determination in the center of BR's former earthen pit and encountered groundwater at approximately 43 feet. BR installed a temporary groundwater monitoring well. After developing the well and allowing it to stabilize for one week, the well was purged and sampled on May 25, 1999. The sample results are as follows:

Benzene	8700 ppb
Toluene	2900 ppb
Ethylbenzene	2800 ppb
Total Xylenes	29000 ppb

Included with this letter are the original Pit Remediation and Closure Reports for the BR earthen pits along with the analytical results of the soil testing. Also attached are the groundwater lab analysis, the drilling log, the monitoring well installation record, and a location diagram from El Paso's 1997 Annual Groundwater Report.

The temporary monitoring well has since been completed as permanent. BR will conduct future activities at the site pursuant to Burlington Resources' Groundwater Management Plan, and it is our plan to work in conjunction with El Paso to assure proper assessment and closure. If you have questions or additional information is needed, please contact me at (505) 326-9841.

Sincerely,



Ed Hasely
Sr. Staff Environmental Representative

Attachments: Pit Remediation and Closure Reports (Pit #1)
Pit Remediation and Closure Reports (Pit #2)
Drilling Log/Wellbore Diagram
Analytical Results - Groundwater
Location Diagram

cc: Denny Foust - NMOCD Aztec
Sandra Miller - El Paso
Rob Stanfield
Gary Osborne
Bruce Gantner
Facility File
Correspondence

Pit Remediation and Closure Reports (Pit #1)

District I

P.O. Box 1980, Hobbs, NM

District II

P.O. Drawer DD, Artesia, NM 88211

District III

1000 Rio Brazos Rd, Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088SUBMIT 1 COPY TO
APPROPRIATE
DISTRICT OFFICE
AND 1 COPY TO
SANTA FE OFFICE

(Revised 3/9/94)

PIT REMEDIATION AND CLOSURE REPORTOperator: Burlington Resources Telephone: (505) 326-9700Address: 3535 E. 30th Farmington NM 87402Facility or: Johnston Federal #4 (Metering Location) Pit # 1
Well NameLocation: Unit or Qtr/Qtr Sec H Sec 27 T 31N R 9W County San JuanPit Type: Separator X Dehydrator Other Land Type: BLM X, State , Fee , Other Pit Location: Pit dimensions: length 19', width 12', depth 4'
(Attach diagram)Reference: wellhead , other DoglegFootage from reference: 81.5'Direction from reference: 55 Degrees East North
of
X West South X

Depth To Ground Water:

(Vertical distance from
contaminants to seasonal
high water elevation of
ground water)Less than 50 feet (20 points)
50 feet to 99 feet (10 points)
Greater than 100 feet (0 Points) 20

Wellhead Protection Area:

(Less than 200 feet from a private
domestic water source, or; less than
1000 feet from all other water sources)Yes (20 points)
No (0 points) 0

Distance To Surface Water:

(Horizontal distance to perennial
lakes, ponds, rivers, streams, creeks,
irrigation canals and ditches)Less than 200 feet (20 points)
200 feet to 1000 feet (10 points)
Greater than 1000 feet (0 points) 0RANKING SCORE (TOTAL POINTS): 20

Pit # 1



PRODUCTION PIT ASSESSMENT FORM

GENERAL

WELL NAME: JOHNSTON FEDERAL WELL NUMBER: 4 DP NO.: NO DE NAME B154

OPERATOR NAME: BURLINGTON RESOURCES P/L DISTRICT:

COORDINATES: TOWNSHIP 31N RANGE 9W SECTION 27 LETTER H

PIT TYPE: DEHYDRATOR ☐ SEPARATOR ☐ BLOW PIT ☐ OTHER: UNKNOWN
CATHODIC PROTECTION WELL: ☐ YES ☒ NO

SITE ASSESSMENT DATE: 8/10/98 MOI FOREMAN NO. AREA:

NMOCD ZONE: (from NMOCD Maps): Inside ☒ Outside ☐

LAND TYPE: BLM ☒ (1) STATE ☐ (2) FEE ☐ (3) INDIAN:

DEPTH TO GROUNDWATER: LESS THAN 50 FT (1) ☒ (20 POINTS)
50 FT TO 99 FT (2) ☐ (10 POINTS)
GREATER THAN 100 FT (3) ☐ (0 POINTS)

WELLHEAD PROTECTION AREA: Is it less than 1,000 feet from wells, springs, or other sources of fresh water extraction?, or; is it less than 200 ft from a private domestic water source (or 1,000' on Navajo surface)?
YES ☐ (20 POINTS) NO ☒ (0 POINTS)

HORIZONTAL DISTANCE TO SURFACE WATER BODY: LESS THAN 200 FT (1) ☐ (20 POINTS)
200 FT TO 1,000 FT (2) ☐ (10 POINTS)
GREATER THAN 1,000 FT (3) ☒ (0 POINTS)
NAME OF SURFACE WATER BODY _____
SURFACE WATER BODY: PERENNIAL RIVERS, STREAMS, CREEKS, IRRIGATION CANALS, DITCHES, LAKES, PONDS

DISTANCE TO NEAREST EPHEMERAL STREAM (1) ☐ <100 FEET (NAVAJO PITS ONLY)
(2) ☐ >100 FEET

SITE ASSESSMENT

TOTAL HAZARD RANKING SCORE: 20 POINTS



Certificate of Analysis No. 9803038-02

FARMINGTON LABORATORY

807 S. CARLTON
FARMINGTON, NM 87499-1289
(505) 326-2588

Philip Environmental Services

4000 Monroe Road

Farmington, NM 87401

Attn: Cory Chance

Date: 08/17/98

Project: BR Misc.

Project No: 19074

Site: Johnston Fed. #4, Pit #1

Matrix: Soil

Sampled By: Holly Bradbury

Date Sampled: 08/10/98

Sample ID: BR8B1541AV

Date Received: 08/11/98

Analytical Data

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Gasoline Range Organics	1.2	0.1 (P)	mg/kg
Surrogate	% Recovery		
1,4-Difluorobenzene	147		
4-Bromofluorobenzene	310MI		
Method 8015B*** for Gasoline			
Analyzed by: AA			
Date: 08/12/98			
Total Petroleum Hydrocarbons-Diesel	ND	10 (P)	mg/kg
Surrogate	% Recovery		
n-Pentacosane	118		
Method 8015B*** for Diesel			
Analyzed by: RR			
Date: 08/14/98			

ND-Not Detected

MI-Matrix Interference

(P)-Practical Quantitation Limit

Notes:

*Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA

**Ref: Standard Methods for Examination of Water & Wastewater, 18th Ed

***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

Billy G. Rich, Lab Director

Pit Remediation and Closure Reports (Pit #2)

Operator: Buckington Resources Telephone: (505) 326-9700

Address: 3535 E. 30th Farmington NM 87402

Facility or: Johnston Federal #4 (Measuring Location) Pit # 2

Well Name _____

Location: Unit or qtr/qtr sec H sec 27 T 31 N R 9W county San Juan

Pit Type: Separator _____ Dehydrator _____ other Tank Drain

Land Type: BLM X, State _____, Fee _____, Other _____

Pit Location: Pit dimensions: length 21, width 20, depth 3
(Attach diagram)

Reference: wellhead _____, other Drill log

Footage from reference: 173'

Direction from reference: 45 Degrees _____ East North _____
of
X West South X

Depth To Ground Water: Less than 50 feet (20 points)
(Vertical distance from 50 feet to 99 feet (10 points)
contaminants to seasonal Greater than 100 feet (0 Points) 20
high water elevation of
ground water) :

Wellhead Protection Area: Yes (20 points)
(Less than 200 feet from a private No (0 points) 0
domestic water source, or; less than
1000 feet from all other water sources)

Distance To Surface Water: Less than 200 feet (20 points)
(Horizontal distance to perennial 200 feet to 1000 feet (10 points)
lakes, ponds, rivers, streams, creeks, Greater than 1000 feet (0 points) 0
irrigation canals and ditches)

RANKING SCORE (TOTAL POINTS): 20



Pit # 2

PRODUCTION PIT ASSESSMENT FORM

WELL NAME: Johnston Federal

WELL NUMBER: 4

DP NO.:
WDE NAME: B134

OPERATOR NAME: Burlington Resources

PIL DISTRICT:

COORDINATES:

TOWNSHIP 31N RANGE 9W SECTION 27 LETTER H

PIT TYPE: DEHYDRATOR ☐SEPARATOR ☐BLOW PIT ☐

OTHER:

CATHODIC PROTECTION WELL: ☐ YES ☒ NO

UNKNOWN

SITE ASSESSMENT DATE: 8/10/98

MOI FOREMAN NO.

AREA:

NMOCD ZONE: (from NMOCD Maps):

Inside ☒Outside ☐

LAND TYPE:

BLM ☒ (1)STATE ☐ (2)FEE ☐ (3)

INDIAN:

DEPTH TO GROUNDWATER:

LESS THAN 50 FT (1) ☒ (20 POINTS)50 FT TO 99 FT (2) ☐ (10 POINTS)GREATER THAN 100 FT (3) ☐ (0 POINTS)

WELLHEAD PROTECTION AREA: Is it less than 1,000 feet from wells, springs, or other sources of fresh water extraction?, or, is it less than 200 ft from a private domestic water source (or 1,000' on Navajo surface)?

YES ☐ (20 POINTS)NO ☒ (0 POINTS)

HORIZONTAL DISTANCE TO SURFACE WATER BODY:

LESS THAN 200 FT (1) ☐ (20 POINTS)200 FT TO 1,000 FT (2) ☐ (10 POINTS)GREATER THAN 1,000 FT (3) ☒ (0 POINTS)

NAME OF SURFACE WATER BODY _____

SURFACE WATER BODY: PERENNIAL RIVERS, STREAMS, CREEKS, IRRIGATION CANALS, DITCHES, LAKES, PONDS

DISTANCE TO NEAREST EPHEMERAL STREAM

(1) ☐ <100 FEET (NAVAJO PITS ONLY)(2) ☐ >100 FEET

TOTAL HAZARD RANKING SCORE: 20 POINTS

GENERAL

SITE ASSESSMENT



Certificate of Analysis No. 9803038-03a

FARMINGTON LABORATORY

807 S. CARLTON
FARMINGTON, NM 87499-1289
(505) 326-2588

Philip Environmental Services

4000 Monroe Road

Farmington, NM 87401

Attn: Cory Chance

Date: 08/17/98

Project: BR Misc.

Project No: 19074

Site: Johnston Fed #4, Pit #2

Matrix: Soil

Sampled By: Holly Bradbury

Date Sampled: 08/10/98

Sample ID: BR8B1541BV

Date Received: 08/11/98

Analytical Data

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Benzene	81000	5000 (P)	µg/Kg
Toluene	41000	5000 (P)	µg/Kg
Ethylbenzene	85000	5000 (P)	µg/Kg
Total Xylene	780000	5000 (P)	µg/Kg
Total Volatile Aromatic Hydrocarbons	987000		µg/Kg

Surrogate

% Recovery

1,4-Difluorobenzene

120

4-Bromofluorobenzene

193MI

Method 8020A***

Analyzed by: AA

Date: 08/13/98

ND-Not Detected

MI-Matrix Interference

(P)-Practical Quantitation Limit

Notes:

*Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA

**Ref: Standard Methods for Examination of Water & Wastewater, 18th Ed

***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

Billy G. Rich, Lab Director



Certificate of Analysis No. 9803038-03b

FARMINGTON LABORATORY

807 S. CARLTON
FARMINGTON, NM 87499-1289
(505) 326-2588Philip Environmental Services
4000 Monroe Road
Farmington, NM 87401
Attn: Cory Chance

Date: 08/17/98

Project: BR Misc.
Site: Johnston Fed #4, Pit #2
Sampled By: Holly Bradbury
Sample ID: BR8B1541BVProject No: 19074
Matrix: Soil
Date Sampled: 08/10/98
Date Received: 08/11/98

Analytical Data

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Gasoline Range Organics	17000	1000 (P)	mg/kg
Surrogate	% Recovery		
1,4-Difluorobenzene	123		
4-Bromofluorobenzene	367MI		
Method 8015B*** for Gasoline			
Analyzed by: AA			
Date: 08/13/98			
Total Petroleum Hydrocarbons-Diesel	2700	200 (P)	mg/kg
Surrogate	% Recovery		
n-Pentacosane	D		
Method 8015B*** for Diesel			
Analyzed by: RR			
Date: 08/14/98			

MI_Matrix Interference (P)-Practical Quantitation Limit D-Diluted, limits not applicable.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
 **Ref: Standard Methods for Examination of Water & Wastewater, 18th Ed
 ***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

Comments: Sample contains petroleum hydrocarbons from C10 - C24 that do no resemble a diesel pattern. (C10 - C24) RR

Billy G. Rich, Lab Director



PRODUCTION PIT REMEDIATION FORM

WELL NAME: Johnston Fed. #4 WELL No.: _____ DP No.: _____
OPERATOR NAME: Burlington Resources P/L DISTRICT: _____
COORDINATES: LETTER: H SECTION: 27 TOWNSHIP: 31N RANGE: 9W
PIT TYPE: DEHYDRATOR: _____ LOCATION DRIP: _____ LINE DRIP: _____ OTHER: X
TANK DRAIN PIT
FOREMAN No.: GARY OSBORNE AREA: Artec

INITIAL REMEDIATION ACTIVITIES

DATE: 12-17-98 TIME: _____

GROUND WATER ENCOUNTERED? ☐ Y / ☒ N

INSIDE NMOCD ZONE

FINAL EXCAVATION DIMENSIONS: LENGTH: 58 WIDTH: 45 DEPTH: 30

APPROX. CUBIC YARDS: 4,702 FINAL PID READING: 1967 ppm

REMEDICATION METHOD: ONSITE LANDFARM _____

OFFSITE LANDFARM X LOCATION: Johnston F022 R 1/4

OTHER _____

LANDFARM DIMENSIONS: LENGTH: _____ WIDTH: _____

OUTSIDE NMOCD ZONE

FINAL SAMPLE DEPTH: _____ FINAL PID READING: _____

EXCAVATION SAMPLING INFORMATION

IF PID READINGS ARE LESS THAN 100 PPM, SAMPLE TAKEN DURING EXCAVATION)

SAMPLE DATE: _____ SAMPLE NOS _____

SAMPLE ANALYSIS: TPH METHOD 8015 MODIFIED

IF PID READINGS ARE GREATER THAN 100 PPM, NO SAMPLE WILL BE TAKEN DURING EXCAVATION.
THE EXCAVATION WILL BE SAMPLED PRIOR TO BACKFILLING (SEE ADDITIONAL SAMPLING SECTION).

REMARKS: Contaminated Soil 3,055 cu. yd
Clean Soil 1,647 cu. yd.

SIGNATURE: Pat Champion

DATE: 12/17/98



Certificate of Analysis No. 9812150-01a

807 S. CARLTON AVE.
FARMINGTON, NEW MEXICO 87401
PHONE (505) 326-2588
FAX (505) 326-2875

Philip Environmental Services

4000 Monroe Road

Farmington, NM 87401

Attn: Robert Thompson

Date: 01/06/99

Project: BR Pits

Project No: 20440

Site: Farmington

Matrix: Soil

Sampled By: R. Thompson

Date Sampled: 12/28/98

Sample ID: 12281416 - BOTTOM

Date Received: 12/30/98

Analytical Data

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Benzene	ND	500 (P)	µg/Kg
Toluene	20000	500 (P)	µg/Kg
Ethylbenzene	8100	500 (P)	µg/Kg
Total Xylene	120000	500 (P)	µg/Kg
Total Volatile Aromatic Hydrocarbons	148100		µg/Kg

Surrogate

% Recovery

1,4-Difluorobenzene

100

4-Bromofluorobenzene

160MI

Method 8020A***

Analyzed by: AA

Date: 01/05/99

ND-Not Detected

MI-Matrix Interference

(P)-Practical Quantitation Limit

Notes:

*Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA

**Ref: Standard Methods for Examination of Water & Wastewater, 18th Ed

***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

Billy G. Rich, Lab Director



Certificate of Analysis No. 9812150-01b

807 S. CARLTON AVE.
FARMINGTON, NEW MEXICO 87401
PHONE (505) 326-2588
FAX (505) 326-2875

Philip Environmental Services
4000 Monroe Road
Farmington, NM 87401
Attn: Robert Thompson

Date: 01/06/99

Project: BR Pits
Site: Farmington
Sampled By: R. Thompson
Sample ID: 12281416 - BOTTOM

Project No: 20440

Matrix: Soil

Date Sampled: 12/28/98

Date Received: 12/30/98

Analytical Data

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Gasoline Range Organics	2100	50 (P)	mg/kg
Surrogate	% Recovery		
1,4-Difluorobenzene	80		
4-Bromofluorobenzene	613MI		
Method 8015B*** for Gasoline			
Analyzed by: AA			
Date: 01/05/99			
Total Petroleum Hydrocarbons-Diesel	430	250 (P)	mg/kg
Surrogate	% Recovery		
n-Pentacosane	96		
Method 8015B*** for Diesel			
Analyzed by: RR			
Date: 01/04/99			

MI-Matrix Interference (P)-Practical Quantitation Limit ND-Not Detected

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
 **Ref: Standard Methods for Examination of Water & Wastewater, 18th Ed
 ***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.


Billy G. Rich, Lab Director



Certificate of Analysis No. 9812150-02a

807 S. CARLTON AVE.
FARMINGTON, NEW MEXICO 87401
PHONE (505) 326-2588
FAX (505) 326-2875

Philip Environmental Services

4000 Monroe Road

Farmington, NM 87401

Attn: Robert Thompson

Date: 01/06/99

Project: BR Pits

Project No: 20440

Site: Farmington

Matrix: Soil

Sampled By: R. Thompson

Date Sampled: 12/28/98

Sample ID: 12281410 - WAUS

Date Received: 12/30/98

Analytical Data

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Benzene	ND	500 (P)	µg/Kg
Toluene	6100	500 (P)	µg/Kg
Ethylbenzene	3400	500 (P)	µg/Kg
Total Xylene	75000	500 (P)	µg/Kg
Total Volatile Aromatic Hydrocarbons	84500		µg/Kg

Surrogate

% Recovery

1,4-Difluorobenzene

100

4-Bromofluorobenzene

167MI

Method 8020A***

Analyzed by: AA

Date: 01/05/99

ND-Not Detected

MI-Matrix Interference

(P)-Practical Quantitation Limit

Notes:

*Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA

**Ref: Standard Methods for Examination of Water & Wastewater, 18th Ed

***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

Billy G. Rich, Lab Director



Certificate of Analysis No. 9812150-02b

807 S. CARLTON AVE.
FARMINGTON, NEW MEXICO 87401
PHONE (505) 326-2588
FAX (505) 326-2875

Philip Environmental Services
4000 Monroe Road
Farmington, NM 87401

Attn: Robert Thompson

Date: 01/06/99

Project: BR Pits

Project No: 20440

Site: Farmington

Matrix: Soil

Sampled By: R. Thompson

Date Sampled: 12/28/98

Sample ID: 12281410 - WAUS

Date Received: 12/30/98

Analytical Data

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Gasoline Range Organics	1600	50 (P)	mg/kg
Surrogate	% Recovery		
1,4-Difluorobenzene	87		
4-Bromofluorobenzene	667MI		
Method 8015B*** for Gasoline			
Analyzed by: AA			
Date: 01/05/99			
Total Petroleum Hydrocarbons-Diesel	250	50 (P)	mg/kg
Surrogate	% Recovery		
n-Pentacosane	92		
Method 8015B*** for Diesel			
Analyzed by: RR			
Date: 01/04/99			

MI-Matrix Interference

(P)-Practical Quantitation Limit

D-Diluted, limits not applicable

Notes:

*Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA

**Ref: Standard Methods for Examination of Water & Wastewater, 18th Ed

***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

Billy G. Rich, Lab Director

PHILIPENVIRONMENTAL
LABORATORY**Chain of Custody Record** — Nonchemical Samples210 West Sand Bank Road
P.O. Box 230
Columbia, IL 62236-0230(618) 281-7173 Phone
(618) 281-5120 FAX

Lab. NO #: 9812150

COC Serial No. **G 3232**

Project Name BE PITS				Lab	Name SPL			
Project Number 20440		Phase . Task 1000 . 77			Location Farmington			
Samplers Paul Archuleta				Analysis Type				Comments
Sample Number	Date	Time	Matrix	X	X			
12281416	12-28-98	1416	Soil	TPH	BTEX			PIO results 1467 ppm
12281410	12-28-98	1410	Soil	TPH	BTEX			PIO results 2026 ppm

Relinquished by:

Received By:

Signature	Date	Time	Signature	Date	Time
<i>Detlev Jambert</i>	12/30/98	1333hrs	<i>Paul Archuleta</i>	12/30/98	1333hrs

Carrier:

Airbill No.

Shipping and Lab Notes:

Drilling Log/Wellbore Diagram

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corp.

4000 Monroe Road

Farmington, New Mexico 87401

(505) 326-2262 FAX (505) 326-2388

Borehole # 1
Well # nw-B1
Page 1 of 2

Project Name Burlington
Project Number 21057 Phase 1000.99
Project Location Johnson Fed #4

Elevation _____
Borehole Location _____
GWL Depth 43'
Logged By P. Cheney
Drilled By K. Padilla
Date/Time Started 5/13/99 0920
Date/Time Completed 5/13/99 1200

Well Logged By P. Cheney
Personnel On-Site P. Cheney, K. Padilla, D. Padilla
Contractors On-Site _____
Client Personnel On-Site Ed Hasely
Drilling Method 4 1/4" ID HSA
Air Monitoring Method PID

Depth (Feet)	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: NDU BZ BH S			Drilling Conditions & Blow Counts
0			Pit has been excavated and back filled to 30' (ed Hasely) First sample will be from 30'-32' Back fill is a yellowish brown, medium to coarse grained sand						
5									
10									
15									
20									
25									
30									
35	35	35	gray to dark gray clay, Approx 5-10% sand, soft, low plasticity, strong ITC odor		30'	0.1	9.1	1064	BC = 5 S/H = 1133
40	37	37	dark gray, fine grained clayey sand, strong ITC odor			0.2	11.5	560	BC = 12 S/H = 1103

Comments:

Geologist Signature _____

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corp.

4000 Monroe Road

Farmington, New Mexico 87401

(505) 326-2262 FAX (505) 326-2388

Borehole # 1
Well # MW-B1
Page 2 of 2

Project Name Burlington
Project Number 21057 Phase 1000.99
Project Location Johnston Fed #4

Elevation _____
Borehole Location _____
GWL Depth _____
Logged By P. Cheney
Drilled By K. Padilla
Date/Time Started 5/13/99 0920
Date/Time Completed 5/13/99 1200

Well Logged By P. Cheney
Personnel On-Site P. Cheney, K. Padilla, D. Padilla
Contractors On-Site _____
Client Personnel On-Site Ed Isely
Drilling Method 4 1/4" ID HSA
Air Monitoring Method PID

Depth (Feet)	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: NDU			Drilling Conditions & Blow Counts
						BZ	BH	S	
40	40		light gray, fine to medium grained clayey sand, firm			1.6	5.0	1025	BC = 7 S/Hs = 291
	42								
45	45		gray, very coarse grained sand w/ 5% small gravel. Strong odor. Approx 2" of yellowish brown consolidated sand at 47'		4.2		946		BC = 36 S/Hs = 252
	47								
50	50		gray, fine to medium grained sand. 2-5% black mineral grains. well consolidated		0.3		77		BC = 50 (7") S/Hs = 141
	52								
55			TD = 50' Set Screen 35-50						
20									
25									
30									
35									
40									

Comments: Materials: 1 silt trap, 1-10' screen, 1-5' screen, 4-10' risers, 1-5' riser
7 sacks silica sand.

Geologist Signature _____

MONITORING WELL INSTALLATION RECORD

Philip Environmental Services Corp.
4090 Monroe Road
Farmington, New Mexico 87401
(505) 326-2262 FAX (505) 326-2388

Borehole # 1
Well # MW-B1
Page 1 of 1

Project Name Burlington Drilling

Project Number 21057 Phase PO00.99
Project Location Johnson Federal #4

On-Site Geologist P Cheney
Personnel On-Site K Padilla, D Padilla
Contractors On-Site
Client Personnel On-Site Ed Hagaly

Elevation
Well Location
GWL Depth 42'
Installed By K Padilla
D Padilla
Date/Time Started 5/13/99 1300
Date/Time Completed 6/4/99 1300

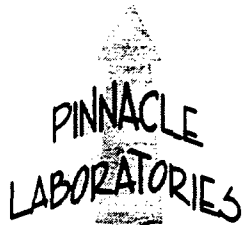
Depths in Reference to Ground Surface				
Item	Material	Depth		
Top of Protective Casing			Top of Protective Casing	<u>+3'</u>
Bottom of Protective Casing			Top of Riser	<u>+2'</u>
Top of Permanent Borehole Casing			Ground Surface	<u>-</u>
Bottom of Permanent Borehole Casing				
Top of Concrete				
Bottom of Concrete				
Top of Grout				
Bottom of Grout				
Top of Well Riser				
Bottom of Well Riser				
Top of Well Screen			Top of Seal	<u>31</u>
Bottom of Well Screen				
Top of Peltonite Seal			Top of Gravel Pack	<u>33</u>
Bottom of Peltonite Seal			Top of Screen	<u>35</u>
Top of Gravel Pack				
Bottom of Gravel Pack				
Top of Natural Cave-In				
Bottom of Natural Cave-In				
Top of Groundwater			Bottom of Screen	<u>50'</u>
Total Depth of Borehole			Bottom of Borehole	<u>52'</u>

Comments:

Geologist Signature

Paul Cheney for Paul Cheney

Analytical Results - Groundwater



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

Pinnacle Lab ID number **905083**
July 14, 1999

PHILIP SERVICES
4000 MONROE RD.
FARMINGTON, NM 87401

Project Name BURL. PITS
Project Number 21057

Attention: C. IRBY

On 5/22/99 Pinnacle Laboratories, Inc. Inc., (ADHS License No. AZ0592), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

Due to the lateness of this report, there will be no charge for the analyses.

EPA method 8021 was performed by Pinnacle Laboratories, Inc., Albuquerque, NM.

All other parameters were performed by ESL (OR) Inc., Portland, OR.

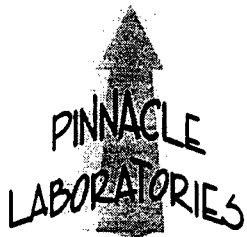
If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

Kimberly D. McNeill
Project Manager

H. Mitchell Rubenstein, Ph. D.
General Manager

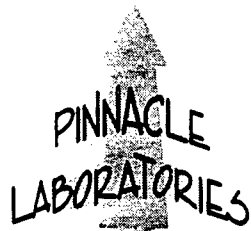
MR: mt

Enclosure



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

CLIENT	: PHILIP SERVICES	PINNACLE ID	: 905083
PROJECT #	: 21057	DATE RECEIVED	: 5/22/99
PROJECT NAME	: BURL. PITS	REPORT DATE	: 7/14/99
PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	PC-03JF6A89232	AQUEOUS	5/21/99
02	PC-04JF470194	AQUEOUS	5/21/99



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Albuquerque, New Mexico 87107
Phone (505) 344-3777
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GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : PHILIP SERVICES
PROJECT # : 21057
PROJECT NAME : BURL. PITS

PINNACLE I.D.: 905083

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	PC-03JF6A89232	AQUEOUS	5/21/99	NA	5/25/99	1
02	PC-04JF470194	AQUEOUS	5/21/99	NA	5/25/99	100

PARAMETER	DET. LIMIT	UNITS	PC-03JF6A89232	PC-04JF470194
BENZENE	0.5	UG/L	< 0.5	8700
TOLUENE	0.5	UG/L	< 0.5	2900
ETHYLBENZENE	0.5	UG/L	< 0.5	2800
TOTAL XYLENES	0.5	UG/L	0.5	29000
1,3,5-TRIMETHYLBENZENE	0.5	UG/L	< 0.5	1100
1,2,4-TRIMETHYLBENZENE	0.5	UG/L	< 0.5	2300
METHYL-t-BUTYL ETHER	2.5	UG/L	< 2.5	< 250

SURROGATE:

BROMOFLUOROBENZENE (%)

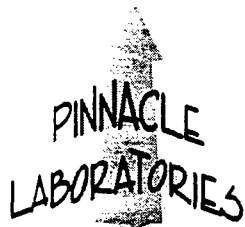
103

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SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:

N/A



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Albuquerque, New Mexico 87107
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GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 905083
BLANK I. D.	: 052599	DATE EXTRACTED	: NA
CLIENT	: PHILIP SERVICES	DATE ANALYZED	: 5/25/99
PROJECT #	: 21057	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: BURL. PITS		

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5
METHYL-t-BUTYL ETHER	UG/L	<2.5
1,3,5-TRIMETHYLBENZENE	UG/L	<0.5
1,2,4-TRIMETHYLBENZENE	UG/L	<0.5

SURROGATE:

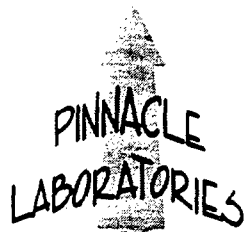
BROMOFLUOROBENZENE (%)

102

SURROGATE LIMITS: (80 - 120)

CHEMIST NOTES:

N/A



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Albuquerque, New Mexico 87107
Phone (505) 344-3777
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GAS CHROMATOGRAPHY QUALITY CONTROL
MSMSD

TEST : EPA 8021 MODIFIED
MSMSD # : 905065-03
CLIENT : PHILIP SERVICES
PROJECT # : 21057
PROJECT NAME : BURL. PITS

PINNACLE I.D. : 905083
DATE EXTRACTED : NA
DATE ANALYZED : 5/25/99
SAMPLE MATRIX : AQUEOUS
UNITS : UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	10.0	10.3	103	10.9	109	6	(80 - 120)	20
TOLUENE	<0.5	10.0	10.5	105	10.6	106	1	(80 - 120)	20
ETHYLBENZENE	<0.5	10.0	10.7	107	10.6	106	1	(80 - 120)	20
TOTAL XYLENES	<0.5	30.0	31.9	106	32.0	107	0	(80 - 120)	20
METHYL-T-BUTYL ETHER	<2.5	10.0	9.6	96	9.4	94	2	(70 - 133)	20

CHEMIST NOTES:
N/A

% Recovery = $\frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$

RPD (Relative Percent Difference) = $\frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$

Environmental Services Laboratory, Inc.

17400 SW Upper Boones Ferry Road • Suite 270 • Portland, OR 97224 • (503) 670-8520

July 09, 1999

Kim McNeill
Pinnacle Laboratories
2709-D Pan American Fwy NE
Albuquerque, NM 87107

TEL: 505-344-3777
FAX (505) 344-4413

RE: 905083/PHIL/Barl. Pits

Order No.: 9905121

Dear Kim McNeill,

Environmental Services Laboratory received 2 samples on 05/25/99 for the analyses presented in the following report.

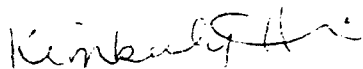
The Samples were analyzed for the following tests:

CHLORIDE (Chloride)
ICP Metals (ICPMET)
MERCURY (Mercury)
Nitrate/Nitrite (Nitrogen)
Sulfate (Sulfate)
TOTAL DISSOLVED SOLIDS (E160.1)

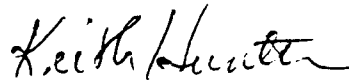
There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative. Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety, without the written approval from the Laboratory.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,



Kimberly Hill
Project Manager



Technical Review

Environmental Services Laboratory

Date: 13-Jul-99

CLIENT: Pinnacle Laboratories
 Lab Order: 9905121
 Project: 905083/PHIL/Barl. Pits
 Lab ID: 9905121-01A

Client Sample ID: 905083-01
 Tag Number:
 Collection Date: 05/21/99
 Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CHLORIDE		EPA 325.3				Analyst: kfi
Chloride	15	50		mg/L	20	05/26/99
NITRATE/NITRITE		EPA 353.3				Analyst: sld
Nitrogen, N+N	ND	0.05		mg/L	1	05/28/99
SULFATE		EPA 375.4				Analyst: sld
Sulfate	1100	420		mg/L	83.3	05/27/99
TOTAL DISSOLVED SOLIDS		EPA 160.1				Analyst: kfi
Total Dissolved Solids (Residue, Filterable)	2000	10		mg/L	1	05/25/99
MERCURY		SW 7470 / EPA 245.				Analyst: btn
Mercury	ND	0.002		mg/L	1	06/08/99
ICP METALS		SW 6010 / EPA 200.				Analyst: btn
Arsenic	ND	0.05		mg/L	1	06/16/99
Barium	ND	0.3		mg/L	1	06/16/99
Cadmium	ND	0.005		mg/L	1	06/16/99
Chromium	ND	0.05		mg/L	1	06/16/99
Lead	ND	0.05		mg/L	1	06/16/99
Selenium	ND	0.05		mg/L	1	06/16/99
Silver	ND	0.05		mg/L	1	06/16/99

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level

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

Environmental Services Laboratory

Date: 13-Jul-99

CLIENT: Pinnacle Laboratories
Lab Order: 9905121
Project: 905083/PHIL/Barl. Pits
Lab ID: 9905121-02A

Client Sample ID: 905083-02
Tag Number:
Collection Date: 05/21/99
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CHLORIDE		EPA 325.3				Analyst: kfl
Chloride	75	50		mg/L	100	05/26/99
NITRATE/NITRITE		EPA 353.3				Analyst: sld
Nitrogen, N+N	ND	0.05		mg/L	1	05/28/99
SULFATE		EPA 375.4				Analyst: sld
Sulfate	170	62		mg/L	12.5	05/27/99
TOTAL DISSOLVED SOLIDS		EPA 160.1				Analyst: kfl
Total Dissolved Solids (Residue, Filterable)	1800	10		mg/L	1	05/25/99
MERCURY		SW 7470 / EPA 245.				Analyst: btn
Mercury	ND	0.002		mg/L	1	06/08/99
ICP METALS		SW 6010 / EPA 200.				Analyst: btn
Arsenic	ND	0.05		mg/L	1	06/16/99
Barium	ND	0.3		mg/L	1	06/16/99
Cadmium	ND	0.005		mg/L	1	06/16/99
Chromium	ND	0.05		mg/L	1	06/16/99
Lead	ND	0.05		mg/L	1	06/16/99
Selenium	ND	0.05		mg/L	1	06/16/99
Silver	ND	0.05		mg/L	1	06/16/99

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

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

Environmental Services Laboratory

Date: 09-Jul-99

CLIENT: Pinnacle Laboratories
Work Order: 9905121
Project: 905083/P1111/Barl. Pils

QC SUMMARY REPORT

Method Blank

Sample ID: MBlank	Batch ID: 01 CL A-6/1/9	Test Code: Chloride	Units: mg/L	Analysis Date 05/26/99	Prep Date:
Client ID:	9905121	Run ID:	NO INST_990526A	SeqNo: 9937	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Chloride	ND	0.5			
Sample ID: MBlank	Batch ID: 01 CL A-6/1/9	Test Code: Chloride	Units: mg/L	Analysis Date 05/07/99	Prep Date:
Client ID:	9905121	Run ID:	NO INST_990507B	SeqNo: 11086	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Chloride	ND	0.5			
Sample ID: MBlank	Batch ID: 01 CL A-6/1/9	Test Code: Chloride	Units: mg/L	Analysis Date 05/17/99	Prep Date:
Client ID:	9905121	Run ID:	NO INST_990517C	SeqNo: 11134	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Chloride	ND	0.5			
Sample ID: MBlank	Batch ID: 01 N+N-6/2/9	Test Code: Nitrogen	Units: mg/L	Analysis Date 05/28/99	Prep Date:
Client ID:	9905121	Run ID:	HIT MAN_990528B	SeqNo: 11800	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Nitrogen, N+N	ND	0.05			
Sample ID: MBlank	Batch ID: 01 SULFATE	Test Code: Sulfate	Units: mg/L	Analysis Date 05/21/99	Prep Date:
Client ID:	9905121	Run ID:	HIT MAN_990521B	SeqNo: 9661	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Sulfate	ND	5			

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

B - Analyte detected in the associated Method Blank

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

CLIENT: Pinnacle Laboratories
Work Order: 9905121
Project: 905083/PHIL/Bart. Pits

QC SUMMARY REPORT Method Blank

Sample ID: MBlank	Batch ID: 01 SULFATE	Test Code: Sulfate	Units: mg/L	Analysis Date 05/27/99	Prep Date:
Client ID:	9905121	Run ID:	HIT MAN_990527A	SeqNo: 9765	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Sulfate	ND	5			

Sample ID: MBlank	Batch ID: 01 SULFATE	Test Code: Sulfate	Units: mg/L	Analysis Date 04/29/99	Prep Date:
Client ID:	9905121	Run ID:	HIT MAN_990429A	SeqNo: 10621	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Sulfate	ND	5			

Sample ID: MBlank	Batch ID: 01 SULFATE	Test Code: Sulfate	Units: mg/L	Analysis Date 05/12/99	Prep Date:
Client ID:	9905121	Run ID:	HIT MAN_990512B	SeqNo: 10869	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Sulfate	ND	5			

Sample ID: MBlank	Batch ID: 01 SULFATE	Test Code: Sulfate	Units: mg/L	Analysis Date 05/20/99	Prep Date:
Client ID:	9905121	Run ID:	HIT MAN_990520A	SeqNo: 10997	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Sulfate	ND	5			

Sample ID: MBlank	Batch ID: 01 TDS-6/1/99	Test Code: E160.1	Units: mg/L	Analysis Date 05/25/99	Prep Date:
Client ID:	9905121	Run ID:	NO INST_990525C	SeqNo: 10233	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Total Dissolved Solids (Residue, Filtera	ND	10			

Qualifiers: ND - Not Detected at the Reporting Limit
 S - Spike Recovery outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits
 R - RPD outside accepted recovery limits

CLIENT: Pinnacle Laboratories
 Work Order: 9905121
 Project: 905083/PHIL/Barl. Pits

QC SUMMARY REPORT

Method Blank

Sample ID: MBlank	Batch ID: 01 TDS-6/1/99	Test Code: E160.1	Units: mg/L	Analysis Date 05/26/99	Prep Date:
Client ID:	9905121	Run ID:	NO INST_990526C	SeqNo: 10284	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Total Dissolved Solids (Residue, Filtera ND 10

Sample ID: MBlank	Batch ID: 01 TDS-6/1/99	Test Code: E160.1	Units: mg/L	Analysis Date 04/28/99	Prep Date:
Client ID:	9905121	Run ID:	NO INST_990428C	SeqNo: 11254	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Total Dissolved Solids (Residue, Filtera ND 10

Sample ID: MBlank	Batch ID: 01 TDS-6/1/99	Test Code: E160.1	Units: mg/L	Analysis Date 05/05/99	Prep Date:
Client ID:	9905121	Run ID:	NO INST_990505B	SeqNo: 11272	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Total Dissolved Solids (Residue, Filtera ND 10

Sample ID: MBlank	Batch ID: 01 TDS-6/1/99	Test Code: E160.1	Units: mg/L	Analysis Date 05/11/99	Prep Date:
Client ID:	9905121	Run ID:	NO INST_990511D	SeqNo: 11287	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Total Dissolved Solids (Residue, Filtera ND 10

Sample ID: MBlank	Batch ID: 01 TDS-6/1/99	Test Code: E160.1	Units: mg/L	Analysis Date 05/18/99	Prep Date:
Client ID:	9905121	Run ID:	NO INST_990518B	SeqNo: 11307	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Total Dissolved Solids (Residue, Filtera ND 10

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

CLIENT: Pinnacle Laboratories
Work Order: 9905121
Project: 905083/PHIL/Barl. Pits

QC SUMMARY REPORT

Method Blank

Sample ID: MB-489	Batch ID: 489	Test Code: ICPMET	Units: mg/L	Analysis Date: 06/16/99	Prep Date: 05/28/99						
Client ID: 9905121	Run ID: ICP_990616D	SeqNo: 16862									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.05									
Barium	ND	0.3									
Cadmium	ND	0.005									
Calcium	ND	0.1									
Chromium	ND	0.05									
Copper	ND	0.02									
Iron	ND	0.1									
Lead	ND	0.05									
Magnesium	ND	0.02									
Manganese	ND	0.02									
Potassium	ND	0.1									
Selenium	ND	0.05									
Silver	ND	0.05									
Sodium	ND	0.2									
Zinc	ND	0.02									

Sample ID: MB-513	Batch ID: 513	Test Code: Mercury	Units: mg/L	Analysis Date: 06/08/99	Prep Date: 06/07/99						
Client ID: 9905121	Run ID: MERC_990608A	SeqNo: 13237									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.0002									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Environmental Services Laboratory

Date: 09-Jul-99

CLIENT: Pinnacle Laboratories

Work Order: 9905121

Project: 905083/PHIL/Barl. Pits

QC SUMMARY REPORT

Sample Duplicate

Sample ID: 9904166-01A DUP	Batch ID: 01 CL A-6/1/9	Test Code: Chloride	Units: mg/L	Analysis Date 05/07/99	Prep Date:	
Client ID:	9905121	Run ID:	NO INST_990507B	SeqNo: 11108		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Chloride	38	5	0	0	0.0%	0 0 40 5.1% 20
Sample ID: 9904166-02A DUP	Batch ID: 01 CL A-6/1/9	Test Code: Chloride	Units: mg/L	Analysis Date 05/07/99	Prep Date:	
Client ID:	9905121	Run ID:	NO INST_990507B	SeqNo: 11112		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Chloride	32	5	0	0	0.0%	0 0 35 9.0% 20
Sample ID: 9905030-01A DUP	Batch ID: 01 CL A-6/1/9	Test Code: Chloride	Units: mg/L	Analysis Date 05/17/99	Prep Date:	
Client ID:	9905121	Run ID:	NO INST_990517C	SeqNo: 11137		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Chloride	140	5	0	0	0.0%	0 0 130 7.4% 20
Sample ID: 9905097-02A DUP	Batch ID: 01 CL A-6/1/9	Test Code: Chloride	Units: mg/L	Analysis Date 05/26/99	Prep Date:	
Client ID:	9905121	Run ID:	NO INST_990526A	SeqNo: 9944		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Chloride, Diss	5	0.5	0	0	0.0%	0 0 5.25 4.9% 20
Sample ID: 9905133-05A DUP	Batch ID: 01 CL A-6/1/9	Test Code: Chloride	Units: mg/L	Analysis Date 05/26/99	Prep Date:	
Client ID:	9905121	Run ID:	NO INST_990526A	SeqNo: 9959		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Chloride, Diss	17.5	5	0	0	0.0%	0 0 17.5 0.0% 20

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Pinnacle Laboratories
 Work Order: 9905121
 Project: 905083/PHIL/Barl. Pits

QC SUMMARY REPORT

Sample Duplicate

Sample ID: 9904111-01A DUP	Batch ID: 01 SULFATE	Test Code: Sulfate	Units: mg/L	Analysis Date 04/29/99	Prep Date:
Client ID: 9905121	Run ID: HIT MAN_990429A		SeqNo: 10624		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Sulfate	59.02	12	0	0	0.0% 80 120 56.18 4.9% 20
Sample ID: 9904157-03A DUP	Batch ID: 01 SULFATE	Test Code: Sulfate	Units: mg/L	Analysis Date 04/29/99	Prep Date:
Client ID: 9905121	Run ID: HIT MAN_990429A		SeqNo: 10662		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Sulfate	233.1	62	0	0	0.0% 80 120 203.9 13.4% 20
Sulfate, Diss	ND	62	0	0	0.0% 80 120 0 0.0% 20
Sample ID: 9904166-01A DUP	Batch ID: 01 SULFATE	Test Code: Sulfate	Units: mg/L	Analysis Date 05/12/99	Prep Date:
Client ID: 9905121	Run ID: HIT MAN_990512B		SeqNo: 10872		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Sulfate	126.9	62	0	0	0.0% 80 120 130.2 2.6% 20
Sample ID: 9905045-01A DUP	Batch ID: 01 SULFATE	Test Code: Sulfate	Units: mg/L	Analysis Date 05/20/99	Prep Date:
Client ID: 9905121	Run ID: HIT MAN_990520A		SeqNo: 11008		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Sulfate	134.4	25	0	0	0.0% 80 120 121 10.5% 20
Sample ID: 9905078-01A DUP	Batch ID: 01 SULFATE	Test Code: Sulfate	Units: mg/L	Analysis Date 05/21/99	Prep Date:
Client ID: 9905121	Run ID: HIT MAN_990521B		SeqNo: 9668		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Sulfate	574.8	120	0	0	0.0% 80 120 494 15.1% 20

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

CLIENT: Pinnacle Laboratories
Work Order: 9905121
Project: 905083/PHIL/Barl. Pits

QC SUMMARY REPORT

Sample Duplicate

Sample ID: 9905097-02A DUP		Batch ID: 01 SULFATE	Test Code: Sulfate	Units: mg/L	Analysis Date 05/27/99		Prep Date:				
Client ID:	9905121	Run ID:	HIT MAN_990527A	SeqNo:	9769						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Lowlimit	Highlimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate, Diss	13	5	0	0	0.0%	80	120	13	0.0%	20	
Sample ID: 9904140-04A DUP		Batch ID: 01 TDS-6/1/99	Test Code: E160.1	Units: mg/L	Analysis Date 04/28/99		Prep Date:				
Client ID:	9905121	Run ID:	NO INST_990428C	SeqNo:	11267						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Lowlimit	Highlimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	510	10	0	0	0.0%	0	0	480	6.1%	20	
Sample ID: 9905011-03A DUP		Batch ID: 01 TDS-6/1/99	Test Code: E160.1	Units: mg/L	Analysis Date 05/05/99		Prep Date:				
Client ID:	9905121	Run ID:	NO INST_990505B	SeqNo:	11286						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Lowlimit	Highlimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	470	10	0	0	0.0%	0	0	470	0.0%	20	
Sample ID: 9905026-01A DUP		Batch ID: 01 TDS-6/1/99	Test Code: E160.1	Units: mg/L	Analysis Date 05/11/99		Prep Date:				
Client ID:	9905121	Run ID:	NO INST_990511D	SeqNo:	11290						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Lowlimit	Highlimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	430	10	0	0	0.0%	0	0	420	2.4%	20	
Sample ID: 9905053-01A DUP		Batch ID: 01 TDS-6/1/99	Test Code: E160.1	Units: mg/L	Analysis Date 05/18/99		Prep Date:				
Client ID:	9905121	Run ID:	NO INST_990518B	SeqNo:	11310						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Lowlimit	Highlimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	440	10	0	0	0.0%	0	0	420	4.7%	20	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

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

B - Analyte detected in the associated Method Blank

CLIENT: Pinnacle Laboratories
 Work Order: 9905121
 Project: 905083/PHIL/Barl. Pits

QC SUMMARY REPORT

Sample Duplicate

Sample ID: 9905098-01A DUP	Batch ID: 01 TDS-6/1/99	Test Code: E160.1	Units: mg/L	Analysis Date: 05/25/99	Prep Date:
Client ID: 9905121	Run ID: NO INST_990525C	SeqNo: 10238			
Analyte	Result	POL	SPK value	SPK Ref Val	%REC Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Total Dissolved Solids (Residue, Filtera	15	10	0	0	0.0% 0 0 34 77.6% 20 R.T
Sample ID: 9905133-03A DUP	Batch ID: 01 TDS-6/1/99	Test Code: E160.1	Units: mg/L	Analysis Date: 05/26/99	Prep Date:
Client ID: 9905121	Run ID: NO INST_990526C	SeqNo: 10287			
Analyte	Result	POL	SPK value	SPK Ref Val	%REC Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Total Dissolved Solids (Residue, Filtera	110	10	0	0	0.0% 0 0 130 16.7% 20
Sample ID: 9905102-01A DUP	Batch ID: 489	Test Code: ICPMET	Units: mg/L	Analysis Date: 06/16/99	Prep Date: 05/28/99
Client ID: 9905121	Run ID: ICP_990616D	SeqNo: 16864			
Analyte	Result	POL	SPK value	SPK Ref Val	%REC Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Arsenic	ND	0.05	0	0	0.0% 0 0 0 0.0% 20
Barium	ND	0.3	0	0	0.0% 0 0 0 0.0% 20
Cadmium	ND	0.005	0	0	0.0% 0 0 0 0.0% 20
Calcium	2.91	0.1	0	0	0.0% 0 0 2.5 15.2% 20
Chromium	ND	0.05	0	0	0.0% 0 0 0 0.0% 20
Copper	ND	0.02	0	0	0.0% 0 0 0 0.0% 20
Iron	ND	0.1	0	0	0.0% 0 0 0 0.0% 20
Lead	ND	0.05	0	0	0.0% 0 0 0 0.0% 20
Magnesium	2.02	0.02	0	0	0.0% 0 0 2.01 0.5% 20
Manganese	.678	0.02	0	0	0.0% 0 0 0.668 1.5% 20
Potassium	.772	0.1	0	0	0.0% 0 0 0.911 16.5% 20
Selenium	ND	0.05	0	0	0.0% 0 0 0 0.0% 20
Silver	ND	0.05	0	0	0.0% 0 0 0 0.0% 20
Sodium	4.73	0.2	0	0	0.0% 0 0 4.67 1.3% 20
Zinc	ND	0.02	0	0	0.0% 0 0 0 0.0% 20

Qualifiers:

ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

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

B - Analyte detected in the associated Method Blank

CLIENT: Pinnacle Laboratories
Work Order: 9905121
Project: 905083/PHIL/Bart. Pits

QC SUMMARY REPORT
Sample Duplicate

Sample ID: 9906044-12A DUP	Batch ID: 513	Test Code: Mercury	Units: mg/L	Analysis Date: 06/08/99	Prep Date: 06/07/99
Client ID: 9905121	Run ID: MERC_990608A	SeqNo: 13240			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDlimit Qual
Mercury	ND	0.0002	0	0	0.0% 0 0 0 0.0% 20

Qualifiers: NID - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

Environmental Services Laboratory

Date: 09-Jul-99

CLIENT: Pinnacle Laboratories

Work Order: 9905121

Project: 9905083/PHIL/Barl. Pits

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9904166-01A MS	Batch ID: 01 CL A-6/1/9	Test Code: Chloride	Units: mg/L	Analysis Date 05/07/99	Prep Date:				
Client ID:	9905121	Run ID:	NO INST_990507B	SeqNo: 11109					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chloride	82	5	50	40	84.0%	75	125	0	
Sample ID: 9904166-01A MSD	Batch ID: 01 CL A-6/1/9	Test Code: Chloride	Units: mg/L	Analysis Date 05/07/99	Prep Date:				
Client ID:	9905121	Run ID:	NO INST_990507B	SeqNo: 11110					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chloride	85	5	50	40	90.0%	75	125	82	3.6% 20
Sample ID: 9904166-02A MS	Batch ID: 01 CL A-6/1/9	Test Code: Chloride	Units: mg/L	Analysis Date 05/07/99	Prep Date:				
Client ID:	9905121	Run ID:	NO INST_990507B	SeqNo: 11113					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chloride	90	5	50	35	110.0%	75	125	0	
Sample ID: 9904166-02A MSD	Batch ID: 01 CL A-6/1/9	Test Code: Chloride	Units: mg/L	Analysis Date 05/07/99	Prep Date:				
Client ID:	9905121	Run ID:	NO INST_990507B	SeqNo: 11114					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chloride	80	5	50	35	90.0%	75	125	90	11.8% 20
Sample ID: 9905030-01A MS	Batch ID: 01 CL A-6/1/9	Test Code: Chloride	Units: mg/L	Analysis Date 05/17/99	Prep Date:				
Client ID:	9905121	Run ID:	NO INST_990517C	SeqNo: 11138					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chloride	240	5	100	130	110.0%	75	125	0	

Qualifiers:

ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

B - Analyte detected in the associated Method Blank

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

CLIENT: Pinnacle Laboratories
 Work Order: 9905121
 Project: 905083/PHIL/Barl. Pits

QC SUMMARY REPORT

Sample Matrix Spike Duplicate

Sample ID: 9905030-01A MSD	Batch ID: 01 CL A-6/1/9	Test Code: Chloride	Units: mg/L	Analysis Date 05/17/99	Prep Date:
Client ID: 9905121	Run ID: NO INST_990517C			SeqNo: 11139	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	230	5	100	130	100.0% 75 125 240 4.3% 20
Sample ID: 9905097-02A MSD	Batch ID: 01 CL A-6/1/9	Test Code: Chloride	Units: mg/L	Analysis Date 05/26/99	Prep Date:
Client ID: 9905121	Run ID: NO INST_990526A			SeqNo: 9945	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride, Diss	16	0.5	10	5.25	107.5% 75 125 0 6.5% 20
Sample ID: 9905097-02A MSD	Batch ID: 01 CL A-6/1/9	Test Code: Chloride	Units: mg/L	Analysis Date 05/26/99	Prep Date:
Client ID: 9905121	Run ID: NO INST_990526A			SeqNo: 9946	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride, Diss	15	0.5	10	5.25	97.5% 75 125 16 6.5% 20
Sample ID: 9905133-05A MSD	Batch ID: 01 CL A-6/1/9	Test Code: Chloride	Units: mg/L	Analysis Date 05/26/99	Prep Date:
Client ID: 9905121	Run ID: NO INST_990526A			SeqNo: 9960	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride, Diss	122.5	5	100	17.5	105.0% 75 125 0
Sample ID: 9905133-05A MSD	Batch ID: 01 CL A-6/1/9	Test Code: Chloride	Units: mg/L	Analysis Date 05/26/99	Prep Date:
Client ID: 9905121	Run ID: NO INST_990526A			SeqNo: 9961	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride, Diss	117.5	5	100	17.5	100.0% 75 125 122.5 4.2% 20

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

CLIENT: Pinnacle Laboratories
 Work Order: 9905121
 Project: 905083/PHIL/Barl. Pits

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9904111-01A MS	Batch ID: 01 SULFATE	Test Code: Sulfate	Units: mg/L	Analysis Date: 04/29/99	Prep Date:
Client ID:	9905121	Run ID: HIT MAN_990429A	SeqNo: 10625		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Sulfate	96.15	25	50	56.18	80.0% 75 125 0

Sample ID: 9904111-01A MSD	Batch ID: 01 SULFATE	Test Code: Sulfate	Units: mg/L	Analysis Date: 04/29/99	Prep Date:
Client ID:	9905121	Run ID: HIT MAN_990429A	SeqNo: 10626		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Sulfate	96.15	25	50	56.18	80.0% 75 125 96.15 0.0% 20

Sample ID: 9904157-03A MS	Batch ID: 01 SULFATE	Test Code: Sulfate	Units: mg/L	Analysis Date: 04/29/99	Prep Date:
Client ID:	9905121	Run ID: HIT MAN_990429A	SeqNo: 10663		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual

Sample ID: 9904157-03A MSD	Batch ID: 01 SULFATE	Test Code: Sulfate	Units: mg/L	Analysis Date: 04/29/99	Prep Date:
Client ID:	9905121	Run ID: HIT MAN_990429A	SeqNo: 10664		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual

Sample ID: 9904166-01A MS	Batch ID: 01 SULFATE	Test Code: Sulfate	Units: mg/L	Analysis Date: 05/12/99	Prep Date:
Client ID:	9905121	Run ID: HIT MAN_990512B	SeqNo: 10873		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Sulfate	1064	500	800	130.2	116.7% 75 125 0

Qualifiers: N/D - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

CLIENT: Pinnacle Laboratories
Work Order: 9905121
Project: 905083/PHIL/Barl. Pits

QC SUMMARY REPORT

Sample Matrix Spike Duplicate

Sample ID: 9904166-01A MSD		Batch ID: 01 SULFATE	Test Code: Sulfate	Units: mg/L	Analysis Date 05/12/99	Prep Date:			
Client ID:	9905121	Run ID:	HIT MAN_990512B		SeqNo: 10874				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Lowlimit	Hightlimit	RPD Ref Val	%RPD RPDlimit Qual
Sulfate	1063	500	800	130.2	116.6%	75	125	1064	0.1% 20
Prep Date:									
Sample ID: 9905045-01A MS		Batch ID: 01 SULFATE	Test Code: Sulfate	Units: mg/L	Analysis Date 05/20/99	Prep Date:			
Client ID:	9905121	Run ID:	HIT MAN_990520A		SeqNo: 11010				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Lowlimit	Hightlimit	RPD Ref Val	%RPD RPDlimit Qual
Sulfate	98.85	42	66	121	-33.6%	75	125	0	S.H
Prep Date:									
Sample ID: 9905045-01A MSD		Batch ID: 01 SULFATE	Test Code: Sulfate	Units: mg/L	Analysis Date 05/20/99	Prep Date:			
Client ID:	9905121	Run ID:	HIT MAN_990520A		SeqNo: 11012				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Lowlimit	Hightlimit	RPD Ref Val	%RPD RPDlimit Qual
Sulfate	99.02	42	66	121	-33.3%	75	125	98.85	0.2% 20 S.H
Prep Date:									
Sample ID: 9905078-01A MS		Batch ID: 01 SULFATE	Test Code: Sulfate	Units: mg/L	Analysis Date 05/21/99	Prep Date:			
Client ID:	9905121	Run ID:	HIT MAN_990521B		SeqNo: 9669				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Lowlimit	Hightlimit	RPD Ref Val	%RPD RPDlimit Qual
Sulfate	839.8	120	300	494	115.3%	75	125	0	
Prep Date:									
Sample ID: 9905078-01A MSD		Batch ID: 01 SULFATE	Test Code: Sulfate	Units: mg/L	Analysis Date 05/21/99	Prep Date:			
Client ID:	9905121	Run ID:	HIT MAN_990521B		SeqNo: 9670				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Lowlimit	Hightlimit	RPD Ref Val	%RPD RPDlimit Qual
Sulfate	803	120	300	494	103.0%	75	125	839.8	4.5% 20

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

CLIENT: Pinnacle Laboratories
Work Order: 9905121
Project: 905083/PHIL/Barl. Pits

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9905097-02A MS		Batch ID: 01 SULFATE	Test Code: Sulfate	Units: mg/L	Analysis Date 05/27/99	Prep Date:
Client ID:		9905121	Run ID: HIT MAN_990527A		SeqNo: 9770	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate, Diss		20.2	5	8	13	90.0% 75 125 0
Sample ID: 9905097-02A MSD		Batch ID: 01 SULFATE	Test Code: Sulfate	Units: mg/L	Analysis Date 05/27/99	Prep Date:
Client ID:		9905121	Run ID: HIT MAN_990527A		SeqNo: 9771	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate, Diss		20.3	5	8	13	91.3% 75 125 20.2 0.5% 20
Sample ID: 9905102-01A MS		Batch ID: 489	Test Code: ICPMET	Units: mg/L	Analysis Date 06/16/99	Prep Date: 05/28/99
Client ID:		9905121	Run ID: ICP_990616D		SeqNo: 16865	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Arsenic		.445	0.05	0.5	0	89.0% 80 120 0
Barium		.475	0.3	0.5	0	95.0% 80 120 0
Cadmium		.45	0.005	0.5	0	90.0% 80 120 0
Calcium		8.02	0.1	5	2.5	110.4% 80 120 0
Chromium		.45	0.05	0.5	0	90.0% 80 120 0
Copper		.416	0.02	0.5	0	83.2% 80 120 0
Iron		5.08	0.1	5	0	101.6% 80 120 0
Lead		.434	0.05	0.5	0	86.8% 80 120 0
Magnesium		6.85	0.02	5	2.01	96.8% 80 120 0
Manganese		1.13	0.02	0.5	0.668	92.4% 80 120 0
Potassium		5.59	0.1	5	0.911	93.6% 80 120 0
Selenium		.478	0.05	0.5	0	95.6% 80 120 0
Silver		.451	0.05	0.5	0	90.2% 80 120 0
Sodium		9.6	0.2	5	4.67	98.6% 80 120 0
Zinc		.438	0.02	0.5	0	87.6% 80 120 0

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

CLIENT: Pinnacle Laboratories
Work Order: 9905121
Project: 905083/PHIL/Barl. Pits

QC SUMMARY REPORT
 Sample Matrix Spike Duplicate

Sample ID: 9905102-01A MSD Batch ID: 489 Test Code: ICPMET Units: mg/L Analysis Date 06/16/99 Prep Date: 05/28/99
 Client ID: 9905121 Run ID: ICP_990616D SeqNo: 16866

Analyte	Result	POL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	.442	0.05	0.5	0	88.4%	80	120	0.445	0.7%	20	
Barium	.468	0.3	0.5	0	93.6%	80	120	0.475	1.5%	20	
Cadmium	.445	0.005	0.5	0	89.0%	80	120	0.45	1.1%	20	
Calcium	7.96	0.1	5	2.5	109.2%	80	120	8.02	0.8%	20	
Chromium	.42	0.05	0.5	0	84.0%	80	120	0.45	6.9%	20	
Copper	.409	0.02	0.5	0	81.8%	80	120	0.416	1.7%	20	
Iron	5.04	0.1	5	0	100.8%	80	120	5.08	0.8%	20	
Lead	.43	0.05	0.5	0	86.0%	80	120	0.434	0.9%	20	
Magnesium	6.75	0.02	5	2.01	94.8%	80	120	6.85	1.5%	20	
Manganese	1.12	0.02	0.5	0.668	90.4%	80	120	1.13	0.9%	20	
Potassium	5.5	0.1	5	0.911	91.8%	80	120	5.59	1.6%	20	
Selenium	.444	0.05	0.5	0	88.8%	80	120	0.478	7.4%	20	
Silver	.445	0.05	0.5	0	89.0%	80	120	0.451	1.3%	20	
Sodium	9.39	0.2	5	4.67	94.4%	80	120	9.6	2.2%	20	
Zinc	.425	0.02	0.5	0	85.0%	80	120	0.438	3.0%	20	

Sample ID: 9906044-12A MSD Batch ID: 513 Test Code: Mercury Units: mg/L Analysis Date 06/08/99 Prep Date: 06/07/99
 Client ID: 9905121 Run ID: MERC_990608A SeqNo: 13241

Analyte	Result	POL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	.00217	0.0002	0.002	0	108.5%	75	125	0			

Sample ID: 9906044-12A MSD Batch ID: 513 Test Code: Mercury Units: mg/L Analysis Date 06/08/99 Prep Date: 06/07/99
 Client ID: 9905121 Run ID: MERC_990608A SeqNo: 13242

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank

Environmental Services Laboratory

Date: 09-Jul-99

CLIENT: Pinnacle Laboratories
Work Order: 9905121
Project: 905083/PHIL/Barl. Pits

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS	Batch ID: 01 CL A-6/1/9	Test Code: Chloride	Units: mg/L	Analysis Date 05/26/99	Prep Date:
Client ID:	9905121	Run ID:	NO INST_990526A	SeqNo: 9938	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Chloride	10	0.5	10	0	100.0% 85 115 0
Sample ID: LCS	Batch ID: 01 CL A-6/1/9	Test Code: Chloride	Units: mg/L	Analysis Date 05/07/99	Prep Date:
Client ID:	9905121	Run ID:	NO INST_990507B	SeqNo: 11087	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Chloride	9.5	0.5	10	0	95.0% 85 115 0
Sample ID: LCS	Batch ID: 01 CL A-6/1/9	Test Code: Chloride	Units: mg/L	Analysis Date 05/17/99	Prep Date:
Client ID:	9905121	Run ID:	NO INST_990517C	SeqNo: 11135	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Chloride	10.3	0.5	10	0	103.0% 85 115 0
Sample ID: LCS	Batch ID: 01 N+N-6/2/9	Test Code: Nitrogen	Units: mg/L	Analysis Date 05/28/99	Prep Date:
Client ID:	9905121	Run ID:	HIT MAN_990528B	SeqNo: 11801	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Nitrogen, N+N	.324	0.05	0.3	0	108.0% 85 115 0
Sample ID: LCS	Batch ID: 01 SULFATE	Test Code: Sulfate	Units: mg/L	Analysis Date 05/21/99	Prep Date:
Client ID:	9905121	Run ID:	HIT MAN_990521B	SeqNo: 9662	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Sulfate	12	5	12	0	100.0% 85 115 0

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

CLIENT: Pinnacle Laboratories
 Work Order: 9905121
 Project: 905083/PHIL/Barl. Pits

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS	Batch ID: 01 SULFATE	Test Code: Sulfate	Units: mg/L	Analysis Date 05/27/99	Prep Date:
Client ID:	9905121	Run ID: HIT MAN_990527A	SeqNo: 9766		
Analyte	Result	POL	SPK value	SPK Ref Val	%REC Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Sulfate	7.816	5	8	0	97.7% 85 115 0
Sample ID: LCS	Batch ID: 01 SULFATE	Test Code: Sulfate	Units: mg/L	Analysis Date 04/29/99	Prep Date:
Client ID:	9905121	Run ID: HIT MAN_990429A	SeqNo: 10622		
Analyte	Result	POL	SPK value	SPK Ref Val	%REC Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Sulfate	10	5	10	0	100.0% 85 115 0
Sample ID: LCS	Batch ID: 01 SULFATE	Test Code: Sulfate	Units: mg/L	Analysis Date 05/12/99	Prep Date:
Client ID:	9905121	Run ID: HIT MAN_990512B	SeqNo: 10870		
Analyte	Result	POL	SPK value	SPK Ref Val	%REC Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Sulfate	7.43	5	8	0	92.9% 85 115 0
Sample ID: LCS	Batch ID: 01 SULFATE	Test Code: Sulfate	Units: mg/L	Analysis Date 05/20/99	Prep Date:
Client ID:	9905121	Run ID: HIT MAN_990520A	SeqNo: 10999		
Analyte	Result	POL	SPK value	SPK Ref Val	%REC Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Sulfate	7.03	5	8	0	87.9% 85 115 0
Sample ID: LCS	Batch ID: 01 TDS-6/1/99	Test Code: E160.1	Units: mg/L	Analysis Date 05/25/99	Prep Date:
Client ID:	9905121	Run ID: NO INST_990525C	SeqNo: 10234		
Analyte	Result	POL	SPK value	SPK Ref Val	%REC Lowlimit Highlimit RPD Ref Val %RPD RPDlimit Qual
Total Dissolved Solids (Residue, Filtera	3674	10	3966	0	92.6% 85 115 0

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

CLIENT: Pinnacle Laboratories
 Work Order: 9905121
 Project: 905083/PHIL/Barl. Pits

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS	Batch ID: 01 TDS-6/1/99	Test Code: E160.1	Units: mg/L	Analysis Date 05/26/99	Prep Date:
Client ID:	9905121	Run ID:	NO INST_990526C	SeqNo: 10285	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Total Dissolved Solids (Residue, Filtera	4080	10	3966	0	102.9% 85 115 0
Sample ID: LCS	Batch ID: 01 TDS-6/1/99	Test Code: E160.1	Units: mg/L	Analysis Date 04/28/99	Prep Date:
Client ID:	9905121	Run ID:	NO INST_990428C	SeqNo: 11255	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Total Dissolved Solids (Residue, Filtera	3550	10	3966	0	89.5% 85 115 0
Sample ID: LCS	Batch ID: 01 TDS-6/1/99	Test Code: E160.1	Units: mg/L	Analysis Date 05/05/99	Prep Date:
Client ID:	9905121	Run ID:	NO INST_990505B	SeqNo: 11273	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Total Dissolved Solids (Residue, Filtera	3490	10	3966	0	88.0% 85 115 0
Sample ID: LCS	Batch ID: 01 TDS-6/1/99	Test Code: E160.1	Units: mg/L	Analysis Date 05/11/99	Prep Date:
Client ID:	9905121	Run ID:	NO INST_990511D	SeqNo: 11288	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Total Dissolved Solids (Residue, Filtera	3630	10	3966	0	91.5% 85 115 0
Sample ID: LCS	Batch ID: 01 TDS-6/1/99	Test Code: E160.1	Units: mg/L	Analysis Date 05/18/99	Prep Date:
Client ID:	9905121	Run ID:	NO INST_990518B	SeqNo: 11308	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Total Dissolved Solids (Residue, Filtera	3610	10	3966	0	91.0% 85 115 0

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

CLIENT: Pinnacle Laboratories
 Work Order: 9905121
 Project: 905083/PHIL/Barl. Pits

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS-489 Batch ID: 489 Test Code: ICPMET Units: mg/L Analysis Date: 06/16/99 Prep Date: 05/28/99
 Client ID: 9905121 Run ID: ICP_990616D SeqNo: 16861

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	.438	0.05	0.5	0	87.6%	80	120	0			
Barium	.426	0.3	0.5	0	85.2%	80	120	0			
Cadmium	.437	0.005	0.5	0	87.4%	80	120	0			
Calcium	4.85	0.1	5	0	97.0%	80	120	0			
Chromium	.414	0.05	0.5	0	82.8%	80	120	0			
Copper	.4	0.02	0.5	0	80.0%	80	120	0			
Iron	4.96	0.1	5	0	99.2%	80	120	0			
Lead	.429	0.05	0.5	0	85.8%	80	120	0			
Magnesium	4.57	0.02	5	0	91.4%	80	120	0			
Manganese	.435	0.02	0.5	0	87.0%	80	120	0			
Potassium	4.49	0.1	5	0	89.8%	80	120	0			
Selenium	.438	0.05	0.5	0	87.6%	80	120	0			
Silver	.432	0.05	0.5	0	86.4%	80	120	0			
Sodium	4.56	0.2	5	0	91.2%	80	120	0			
Zinc	.42	0.02	0.5	0	84.0%	80	120	0			

Sample ID: LCS-513 Batch ID: 513 Test Code: Mercury Units: mg/L Analysis Date: 06/08/99 Prep Date: 06/07/99
 Client ID: 9905121 Run ID: MERC_990608A SeqNo: 13238

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	.00101	0.0002	0.001	0	101.0%	80	120	0			

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

Environmental Services Laboratory

Date: 09-Jul-99

CLIENT: Pinnacle Laboratories
Work Order: 9905121
Project: 905083/PHIL/Barl. Pits

QC SUMMARY REPORT Initial Calibration Verification Standard

Sample ID: ICV	Batch ID: 513	Test Code: Mercury	Units: mg/L	Analysis Date: 06/08/99	Prep Date: 06/07/99						
Client ID:	9905121	Run ID: MERC_990608A		SeqNo: 13260							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	.00216	0.0002	0.002	0	108.0%	90	110	0			

Qualifiers: NID - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

ANALYSIS REQUEST

2709-D Pan American Freeway, NE
Albuquerque, New Mexico 87107

(505) 344-3777 Fax (505) 344-4413

[illegible]

PROJECT INFORMATION		SAMPLE RECEIPT		SAMPLES SENT TO:		RELINQUISHED BY: 1.		RELINQUISHED BY: 2.	
PROJECT #:	905083	Total Number of Containers		PENSACOLA - STL-FL		Signature:	Time:	Signature:	Time:
PROJ. NAME:	PHL	Chain of Custody Seals		PORTLAND - ESL-OR	X	Signature:	Time:	Signature:	Time:
QC LEVEL:	STD IV	Received Intact?		STL - CT		Printed Name:	Date:	Printed Name:	Date:
QC REQUIRED:	MS MSD BLANK	Received Good Cond./Cold		STL - NEW JERSEY		Signature:	Time:	Signature:	Time:
TAT:	STANDARD RUSH!!	LAB NUMBER:		N CREEK		Printed Name:	Date:	Printed Name:	Date:
				BARRINGER		RECEIVED BY:	1.	RECEIVED BY:	2.
DUE DATE:	6/4	COMMENTS:		SEQUOIA		Signature:	Time:	Signature:	Time:
RUSH SURCHARGE:	-					Printed Name:	Date:	Printed Name:	Date:
CLIENT DISCOUNT:	-								
SPECIAL CERTIFICATION									
REQUIRED: YES (NO)									

PROJECT MANAGER:

ANALYSIS REQUEST

COMPANY: Philip Services
ADDRESS: 4600 Menace Rd.
Farmingington, N.M. 87401
PHONE: (505) 326-2262
FAX: (505) 326-2355
BILL TO: Philip Services C. Tchby
COMPANY: Philip Services
ADDRESS: 4600 Menace Rd.
Farmingington, N.M. 87401

SAMPLE ID DATE TIME MATRIX LAB ID.

PC-C3-SEA 874232 5/21 1200 H2O -01
PC-C4-SEA 70194 5/21 1245 H2O -02

Petroleum Hydrocarbons (418.1) TRPH
(MOD.8015) Diesel/Direct Inject

(M8015) Gas/Purge & Trap

8021 (BTEX)/8015 (Gasoline) MTBE

8021 (BTEX) ☐ MTBE ☐ TMB ☐ PCE

8021 (TCL)

8021 (EDX)

8021 (HALO)

8021 (CUST)

504.1 EDB ☐ / DBCP ☐

8260 (TCL) Volatile Organics

8260 (Full) Volatile Organics

8260 (CUST) Volatile Organics

8260 (Landfill) Volatile Organics

Pesticides /PCB (608/8081/8082)

Herbicides (615/8151)

Base/Neutral/Acid Compounds GC/MS (625/8270)

Polynuclear Aromatics (610/8310/8270-SIMS)

General Chemistry: Cl, SO₄, NO₃,
NO₂, TDS

Priority Pollutant Metals (13)

Target Analyte List Metals (23)

RCRA Metals (8)

RCRA Metals by TCLP (Method 1311)

Metals:

NUMBER OF CONTAINERS

PLEASE FILL THIS FORM IN COMPLETELY.

SHADED AREAS ARE FOR LAB USE ONLY.

PROJECT INFORMATION

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

RELINQUISHED BY: 1.

RELINQUISHED BY: 2.

PROJ. NO.: 21057

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK(NORMAL) ☒

PROJ. NAME: Burd, P, Is

CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER

P.O. NO.:

METHANOL PRESERVATION ☐

SHIPPED VIA:

COMMENTS: FIXED FEE ☐

SAMPLE RECEIPT

NO. CONTAINERS

10

CUSTODY SEALS

(M) N/NA

RECEIVED INTACT

Y

BLUE ICE/CE

580

TOTAL NITRATE with hr
Run H
5/21/99

RECEIVED BY: 1.

RECEIVED BY: (LAB) 2.

Signature: Time:

Signature: Time:

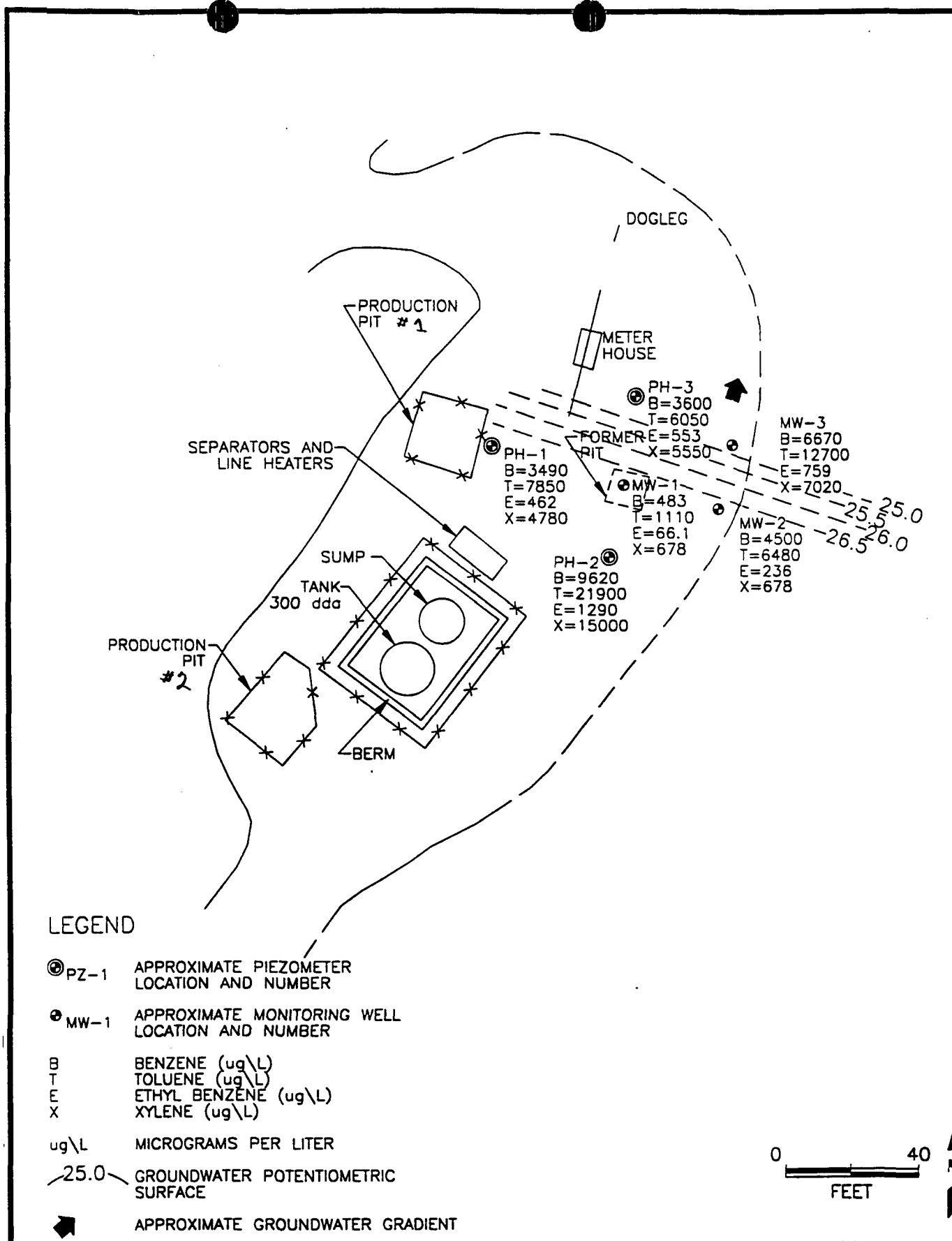
Printed Name: Date:

Printed Name: Date:

Company:

Pinnacle Laboratories Inc.

Location Diagram



COL. 17520BP-001



TITLE:
JOHNSTON FEDERAL NO. 4
70194

DWN:	DES.:
TMM	CC
CHKD:	APPD:
CC	
DATE:	REV.:
1/21/98	0

PROJECT NO.:	17
EPFS GW PITS	
FIGURE 1	

BURLINGTON RESOURCES 1999 ANNUAL GROUNDWATER REPORT

Johnson Federal #4 Metering Facility

SITE DETAILS

Location: Unit Letter M, Section 27, Township 31N, Range 9W; San Juan County, New Mexico
Land Type: Federal

PREVIOUS ACTIVITIES

El Paso Field Services (EPFS) excavated approximately 60 cubic yards from their pit at this location in 1994 and installed a monitoring well in 1995. Please note that in past reports, EPFS has incorrectly shown the location of their monitoring wells at the Johnson Federal #4 producing location, which is in a different section from where the metering facility and groundwater impact are located.

Burlington Resources conducted the initial site assessments of our two pits in August 1998. The separator pit tested clean and was closed. The tank drain pit had levels above standards and excavation of approximately 3055 cubic yards of impacted soil to a depth of 30 feet occurred in December 1998.

1999 ACTIVITIES

Prior to backfilling, the excavation was sprayed with 20 barrels of Oxy-1. Clean overburden and soils from a nearby wash were used to backfill the excavation. Vertical extent drilling encountered groundwater at approximately 43 feet and a groundwater monitoring well was installed on May 13, 1999. After developing the well and allowing it to stabilize, the well was purged and sampled on May 25, 1999.

Quarterly groundwater monitoring continued through 1999. Groundwater analytical data are presented in Table 1. A site map, which was taken from EPFS's 1998 Annual Groundwater Report and modified with Burlington's information, is presented as Figure 1.

CONCLUSIONS

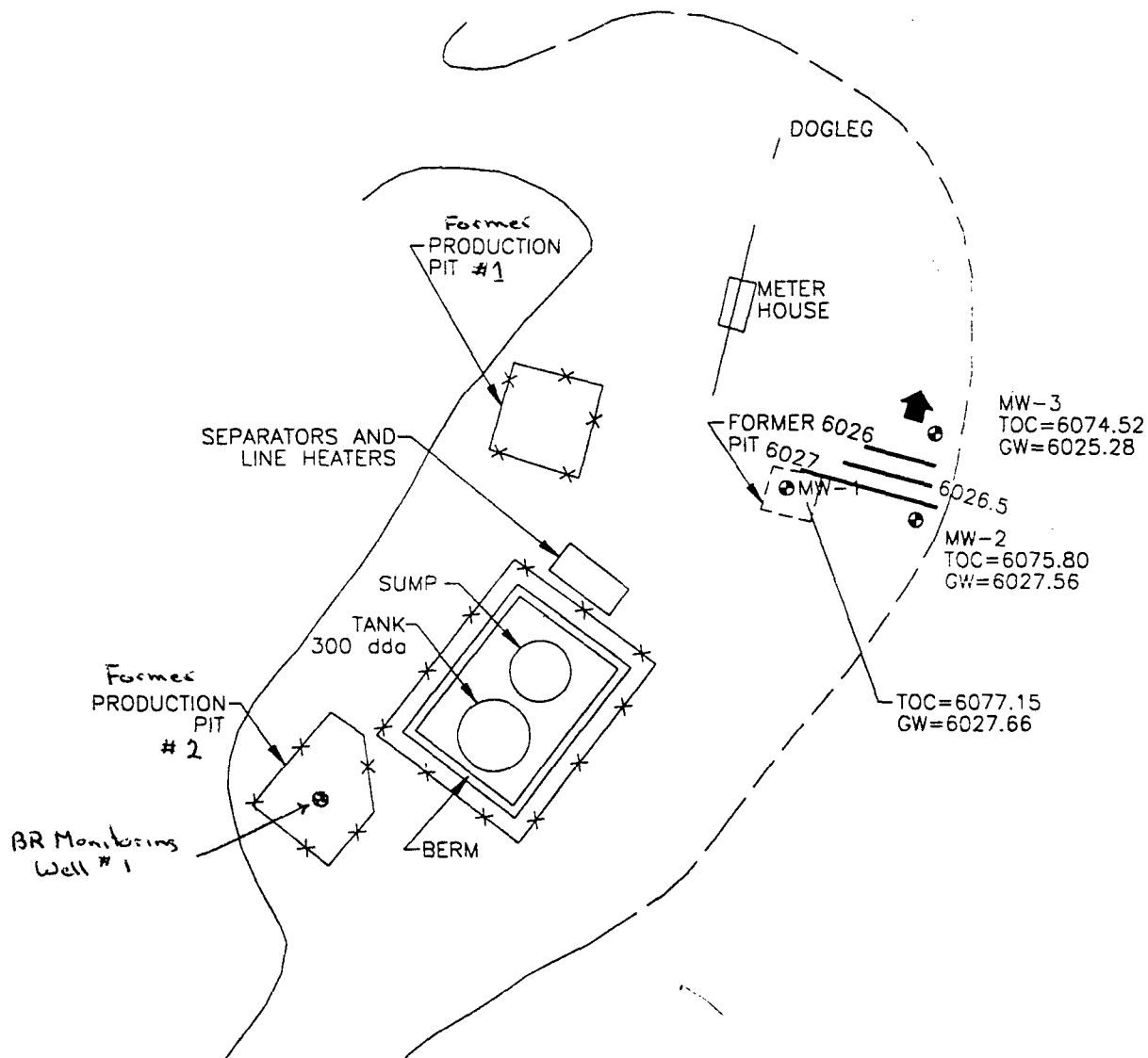
Analytical results of groundwater sampling from the monitoring well in 1999 show levels of benzene, toluene, ethylbenzene and total xylenes above New Mexico Groundwater Standards.

RECOMMENDATIONS

- Burlington Resources proposes to continue quarterly sampling at this site.
- Burlington Resources will initiate discussions with EPFS to assure proper assessment and closure of this site.

Attachments: Figure 1 - Site Map
Table 1 - Groundwater Sampling Results Summary
1999 Groundwater Analytical Results
Letter to Olson dated July 29, 1999 including the Drilling Log/Wellbore Diagram

Figure 1



LEGEND

- MW-1 APPROXIMATE MONITORING WELL LOCATION AND NUMBER
- TOC TOP OF CASING ELEVATION
- GW GROUNDWATER POTENTIOMETRIC SURFACE
- ➔ GROUNDWATER GRADIENT
- 25.0 GROUNDWATER POTENTIOMETRIC SURFACE



COL. 17520BP-003



TITLE:
JOHNSTON FEDERAL NO. 4
METER 70194 (BR Modified)
2/23/99 3/22/00

DWN: TMM
CHKD: CC
DATE: 3/22/99

DES.: CC
APPD:
REV.: 0

PROJECT NO.: 1752
EPFS GW PITS

FIGURE 1

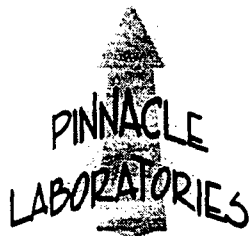
Table 1

Groundwater Monitoring Well Sampling

Well Name	MW #	Sample Date	B (ppb)	T (ppb)	E (ppb)	X (ppb)	BTEX (ppb)	DTW (ft)
<i>Standard</i>			10	750	750	620		
Johnson Fed #4 (EPNG)	1	5/25/99	8700	2900	2800	29000	43400	
		9/1/99	Product Thickness = .005 ft				No Sample.	47.015*
		12/1/99	4700	1300	900	10000	16900	46.96
		1/18/00	3600	820	840	7500	12760	44.05

* Depth to Product.

1999 GROUNDWATER ANALYTICAL RESULTS



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : PHILIP SERVICES
PROJECT # : 21057
PROJECT NAME : BURL. PITS

PINNACLE I.D.: 905083

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	PC-03JF6A89232	AQUEOUS	5/21/99	NA	5/25/99	1
02	PC-04JF470194	AQUEOUS	5/21/99	NA	5/25/99	100

PARAMETER	DET. LIMIT	UNITS	PC-03JF6A89232	PC-04JF470194
BENZENE	0.5	UG/L	< 0.5	8700
TOLUENE	0.5	UG/L	< 0.5	2900
ETHYLBENZENE	0.5	UG/L	< 0.5	2800
TOTAL XYLENES	0.5	UG/L	0.5	29000
1,3,5-TRIMETHYLBENZENE	0.5	UG/L	< 0.5	1100
1,2,4-TRIMETHYLBENZENE	0.5	UG/L	< 0.5	2300
METHYL-t-BUTYL ETHER	2.5	UG/L	< 2.5	< 250

SURROGATE:

BROMOFLUOROBENZENE (%)

103

82

SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:

N/A

Environmental Services Laboratory

Date: 13-Jul-99

CLIENT: Pinnacle Laboratories
Lab Order: 9905121
Project: 905083/PHIL/Barl. Pits
Lab ID: 9905121-02A

Client Sample ID: 905083-02
Tag Number:
Collection Date: 05/21/99
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CHLORIDE		EPA 325.3				Analyst: kfl
Chloride	75	50		mg/L	100	05/26/99
NITRATE/NITRITE		EPA 353.3				Analyst: sld
Nitrogen, N+N	ND	0.05		mg/L	1	05/28/99
SULFATE		EPA 375.4				Analyst: sld
Sulfate	170	62		mg/L	12.5	05/27/99
TOTAL DISSOLVED SOLIDS		EPA 160.1				Analyst: kfl
Total Dissolved Solids (Residue, Filterable)	1800	10		mg/L	1	05/25/99
MERCURY		SW 7470 / EPA 245.				Analyst: btn
Mercury	ND	0.002		mg/L	1	06/08/99
ICP METALS		SW 6010 / EPA 200.				Analyst: btn
Arsenic	ND	0.05		mg/L	1	06/16/99
Barium	ND	0.3		mg/L	1	06/16/99
Cadmium	ND	0.005		mg/L	1	06/16/99
Chromium	ND	0.05		mg/L	1	06/16/99
Lead	ND	0.05		mg/L	1	06/16/99
Selenium	ND	0.05		mg/L	1	06/16/99
Silver	ND	0.05		mg/L	1	06/16/99

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

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

ANALYSIS REQUEST

(505) 344-3777 Fax (505) 344-4413

[illegible]

PLEASE FILL THIS FORM IN COMPLETELY.

SHADED AREAS ARE FOR LAB USE ONLY.

PROJECT INFORMATION				PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS				RELINQUISHED BY: 1.		RELINQUISHED BY: 2.	
PROJ NO.	PROJ NAME	P.O. NO.	SHIPPED VIA	(RUSH) 1 24hr 1 48hr 1 72hr 1 1 WEEK	(NORMAL) X	Signature:	Time:	Signature:	Time:	Signature:	Time:
NO. CONTAINERS	CUSTODY SEALS	RECEIVED INTACT	BLUE ICE/CE	CERTIFICATION REQUIRED: 1 NM 1 SDWA 1 OTHER	METHANOL PRESERVATION 1	Printed Name:	Date:	Printed Name:	Date:	Printed Name:	Date:
10	NYN/NA	Y	580								
SAMPLE RECEIPT				COMMENTS: FIXED FEE ()				RECEIVED BY: 1.		RECEIVED BY: (LAB) 2.	
TOTAL AMOUNT \$116				TOTAL AMOUNT \$116				Signature: [Signature]		Signature: [Signature]	
Date: 5/21/95				Date: 5/21/95				Date: 5/21/95		Date: 5/21/95	
Company: Pinnacle Laboratories Inc.				Company: Pinnacle Laboratories Inc.				Company: Pinnacle Laboratories Inc.		Company: Pinnacle Laboratories Inc.	

SAMPLE ID	DATE	TIME	MATRIX	LAB I.D.	Petroleum Hydrocarbons (418.1) TRPH	(MOD.8015) Diesel/Direct Inject	(M8015) Gas/Purge & Trap	8021 (BTX)/8015 (Gasoline) MTBE	8021 (BTX) ☐ MTBE ☐ TMB ☐ PCE	8021 (TCL)	8021 (EDX)	8021 (HALO)	8021 (CUST)	504.1 EDB ☐ / DBCP ☐	8260 (TCL) Volatile Organics	8260 (Full) Volatile Organics	8260 (CUST) Volatile Organics	8260 (Landfill) Volatile Organics	Pesticides /PCB (608/8081/8082)	Herbicides (615/8151)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Polynuclear Aromatics (610/8310/8270-SIMS)	General Chemistry: Cl, SO ₄ , NO ₃ , NO ₂ , TP5	Priority Pollutant Metals (13)	Target Analyte List Metals (23)	RCRA Metals (8)	RCRA Metals by TCLP (Method 1311)	Metals:	NUMBER OF CONTAINERS		
PC-63-516A 84232	5/21	1200	HEU	-01																											
PC-63-516A 84232	5/21	1245	HEU	-02					X																						



Water Sampling Data

 Location No. JOHNSTON FEDERAL #4
 Group List Number _____

 Sample Type: ☒ Groundwater ☐ Surface Water ☐ Other _____ Date 9/1/99
 Project Name BURLINGTON WATER SAMPLING Project No. 62800023
 Project Manager C. T. RBY Phase Task No. _____
 Site Name JOHNSTON FEDERAL #4, MW #4

Sampling Specifications

 Requested Sampling
 Depth Interval (feet) _____
 Requested Wait Following
 Development/Purging (hours) _____

Initial Measurements

 Time Elapsed From Final Development/Purging (hours) _____
 Initial Water Depth (feet) DTP 47.025' DTW 47.02'
 Nonaqueous Liquids Present (Describe) .005' PRODUCT TOC

Water Quality/Water Collection

DO = Dissolved Oxygen; Cond. = Conductivity

Date	Time	Sampler Initials	Water Quality Readings				Water Collection Data					Notes (Explain in Comments Below)
			Temp. (°C)	pH	DO (mg/L)	Cond. (µmhos/ cm)	Volume Removed (gallons)	Removal Rate (gal/min)	Pump Intake Depth (feet)	Bail	Final Water Depth (feet)	

 TOC
 ~ 32%

Sample Containers

 Container Types: G = Clear Glass; A = Amber Glass; P = Plastic; V = VOA Vial (Glass); O = Other (Specify)
 Preservatives: H = HCl; N = HNO₃; S = H₂SO₄; A = NaOH; O = Other (Specify); - = None

Analytical Parameter List	Container			Field Filtered		Preserved	Cooled During Collection		Comments
	Number	Type	Volume (mL)	Yes	No		Yes	No	

Filter Type _____ Chain-of-Custody Form Number _____

 Comments FREE PRODUCT ~ .005' THICKNESS.
NO SAMPLES TAKEN

 Signature Cathy Culbreth Date 9/1/99 Reviewer _____ Date _____



Water Sampling Data

Location No. _____

Serial No. WSD- _____

Group List Number _____

Sample Type: ☒ Groundwater ☐ Surface Water ☐ Other _____ Date 12-1-99Project Name Burlington Docks Project No. 62800025Project Manager C. Feky Phase/Task No. 35Site Name Johnson Fed #4

Sampling Specifications

Requested Sampling _____

Depth Interval (feet) _____

Requested Wait Following _____

Development/Purging (hours) _____

Initial Measurements

Time Elapsed From Final Development/Purging (hours) _____

Initial Water Depth (feet) _____

Nonaqueous Liquids Present (Describe) _____

Water Quality/Water Collection

DO = Dissolved Oxygen; Cond. = Conductivity

Date	Time	Sampler Initials	Water Quality Readings				Water Collection Data				Notes Explain in Comments Below
			Temp (°C)	pH	DO (mg/L)	Cond. (µmhos/cm)	Volume Removed (gallons)	Removal Rate (gal/min)	Pump Intake Depth (feet)	Final Water Depth (feet)	
							See Well	Development	Form		

Container Type: G = Glass; A = Amber Glass; P = Plastic; V = VOA Vial (Glass); O = Other (Specify)

Preservatives: H = HCl; N = HNO₃; S = H₂SO₄; A = NaOH; O = Other (Specify); - = None

Sample Containers

Analytical Parameter List	Container			Field Filtered		Preserved	Cooled During Collection		Comments
	Number	Type	Volume (mL)	Yes	No		Yes	No	
3TEX	2	VOA	40			✓	✓		JF1299-1

Filter Type _____ Chain-of-Custody Form Number _____

Comments _____

Signature Cecil Feky Date 12-1-99 Reviewer _____ Date _____

Project No. 62800025

Phase, Task No. 35

Series No. 1159100001

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Dole	Time	Development Rate (inches/minute)	Stable Depth (feet)	Entry Water Depth (feet)	Water Volume Performed (200-300)		Flow Rate (gallons per hour)	Temperature (°C)	pH	Conductivity (microsiemens/cm)	Dissolved Oxygen (mg/L)	Comments
					measured	calculated						
12-1-99	15:15	X							7.4	2840		
									7.5	2530		
									7.4	2470		
12-1-99	15:36								7.4	2400		

100

Drive



2708-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : (none)
PROJECT NAME : (none)

PINNACLE I.D.: 912012

SAMPLE		MATRIX	DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.		SAMPLED	EXTRACTED	ANALYZED	FACTOR
04	SOC1299-1	AQUEOUS	12/1/99	NA	12/6/99	10
05	JF1299-1	AQUEOUS	12/1/99	NA	12/7/99	100
PARAMETER		DET. LIMIT	UNITS	SOC1299-1	JF1299-1	
BENZENE		0.5	UG/L	78	4700	
TOLUENE		0.5	UG/L	170	1300	
ETHYLBENZENE		0.5	UG/L	100	900	
TOTAL XYLENES		0.5	UG/L	1300	10000	
METHYL-t-BUTYL ETHER		2.5	UG/L	< 25	< 250	

SURROGATE:

BROMOFLUOROBENZENE (%)

86

109

SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:

N/A

Pinnacle Laboratories Inc.

CHAIN OF CUSTODY
DATE: 12-2-99 PAGE: 1 OF 1

PL Accession #: 912012

PLEASE FILL THIS FORM IN COMPLETELY.

SHADED AREAS ARE FOR LAB USE ONLY.

PROJECT MANAGER: Cecil T. By

COMPANY: Philip Env. Svcs

ADDRESS: 4000 Monroe Farmingdale, NY 11740

PHONE: 605-262-2262

FAX:

BILL TO: Philip Env. Svcs

COMPANY:

ADDRESS:

SAMPLE ID DATE TIME MATRIX LAB ID

C021299-1-2 12/2 AD 01

C021299-1-1 02

F051299-1 03

S051299-1 04

SF1299-1 05

Petroleum Hydrocarbons (418.1) TRPH
(MOD.8015) Diesel/Direct Inject

(M8015) Gas/Purge & Trap

8021 (BTEX)/8015 (Gasoline) MTBE

8021 (BTEX) ☐ MTBE ☐ TMB ☐ PCE

8021 (TCL)

8021 (EDX)

8021 (HALO)

8021 (CUST)

504.1 EDB ☐ / DBCP ☐

8260 (TCL) Volatile Organics

8260 (Full) Volatile Organics

8260 (CUST) Volatile Organics

8260 (Landfill) Volatile Organics

Pesticides /PCB (608/8081/8082)

Herbicides (615/8151)

Base/Neutral/Acid Compounds GC/MS (825/8270)

Polynuclear Aromatics (810/8310/8270-SIMS)

General Chemistry:

Priority Pollutant Metals (13)

Target Analyte List Metals (23)

RCRA Metals (8)

RCRA Metals by TCLP (Method 1311)

Metals:

NUMBER OF CONTAINERS

PROJECT INFORMATION

PROJ. NO.:

PROJ. NAME:

P.O. NO.:

SHIPPED VIA:

SAMPLE RECEIPT

NO. CONTAINERS

CUSTODY SEALS

RECEIVED INTACT

BLUE FORCE

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☐

CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER

METHANOL PRESERVATION ☐

COMMENTS: FIXED FEE ☐

RELINQUISHED BY: 1.

Signature: Cecil T. By Date: 12-2-99

Printed Name: Cecil T. By

RELINQUISHED BY: 2.

Signature: Date:

Printed Name: Date:

Company: See reverse side (From Manager)

RECEIVED BY: 1.

Signature: Time: 11:35

Printed Name: Date: 12/2/99

Company: Pinnacle Laboratories Inc.

LETTER TO MR. OLSON
DATED JULY 29, 1999