AP - 34

ANNUAL MONITORING REPORT

YEAR(S):

9/22/2003

Site Name: Monument 6" Line
Remediation Plan: 1R - 379
Company: Navajo
Contractor: Safety Environmental Solutions (Bob Allen)
Date Inspected: September 22, 2003 by Ed Martin, Larry Johnson and Paul Sheeley
Further vertical excavation is not feasible since this action would disturb the barrier, still intact, between the leak site and the groundwater. S.E.S is using "Geo-squirt" pumps to accomplish product recovery. This leak occurred along an 800' section and a separate 200' section of an 18-month old pipeline.

Discussions are ongoing between Navajo, S.E.S. and the State Land Office concerning the status of the recovery wells. Apparently, SLO wants to designate these wells as monitor wells for which they exact a fee of $500 each. These are, in fact, recovery wells. SLO representatives are Debbie Padilla, Brian Hennington and/or Cody Morrow.

Recommendations:
Since product recovery is continuing, a groundwater abatement plan will not be required to be initiated at this time. This situation will be re-evaluated in 2004. Site is open to inspection by NMOCD district (I) representatives and they will monitor progress.

For tracking purposes, a remediation plan number will be assigned and entered into the NMOCD RBDMS system.

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This is a view of the site showing the recovery wells and the collection devices. Approximately 2100 – 2300 bbls were lost, and, to date, 1100 bbls have been recovered.

A different view of the site showing the areas of migration of the oil from the leaking pipeline. The pipeline in question was installed only 18 months prior to the leak.

Still another view showing recovery systems and soil staining.

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: BOB ALLEN
703 E. CLINTON, #103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 05/22/03
Reporting Date: 05/23/03
Project Number: NAV-02-005
Project Name: NORTH MONUMENT SOUR SYSTEM
Project Location: MONUMENT, NM

Sampling Date: 05/21/03
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

LAB NUMBER	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE		05/22/03	05/22/03	05/22/03	05/22/03
H7681-1	MW #3	<0.002	<0.002	<0.002	<0.006
H7681-2	MW #5	<0.002	<0.002	<0.002	<0.006
H7681-3	MW #1	<0.002	<0.002	<0.002	<0.006
Quality Control		0.109	0.108	0.106	0.314
True Value QC		0.100	0.100	0.100	0.300
% Recovery		109	108	106	105.0
Relative Percent Difference		9.2	5.9	5.6	6.6

METHOD: EPA SW-846 8260

Chemist

5/23/03
Date

CARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 (915) 673-7001 Fax (915) 673-7020
101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: SESI
Project Manager:
Address: 703 E. CLINTON, #103
City: HOBBS State: NM Zip: 88240
Phone #: (505) 397-0510
Fax #: (505) 393-4388
Project #: NAN-02-005 Project Owner:
Project Name: NORTH MONUMENT SOUR SYSTEM
Project Location: MONUMENT

BILL TO PO #:
Company: SAME
Attn:
Address:
City:
State: Zip:
Phone #:
Fax #:

FOR LAB USE ONLY LAB I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRES.: ACID:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	ANALYSIS REQUEST: B. TEX
H17681-1	MW #3		3	X							X		5-20	2:00	X
-2	MW #5		3	X							X		5-20	2:45	X
-3	MW #1		2	X							X		5-20	3:30	X

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished: Brandy Calle
Date: 5-22-03
Time: 5:20 AM
Relinquished By:
Date:
Time:
Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

Received By:
Received By: (Lab Staff)
Sample Condition: Cool: ☒ Yes ☐ No; Intact: ☒ Yes ☐ No
CHECKED BY: (Initials)

Phone Result ☐ Yes ☐ No Additional Fax #:
Fax Result: ☐ Yes ☐ No
REMARKS:

† Cardinal cannot accept verbal changes. Please fax written changes to 915-673-7020.

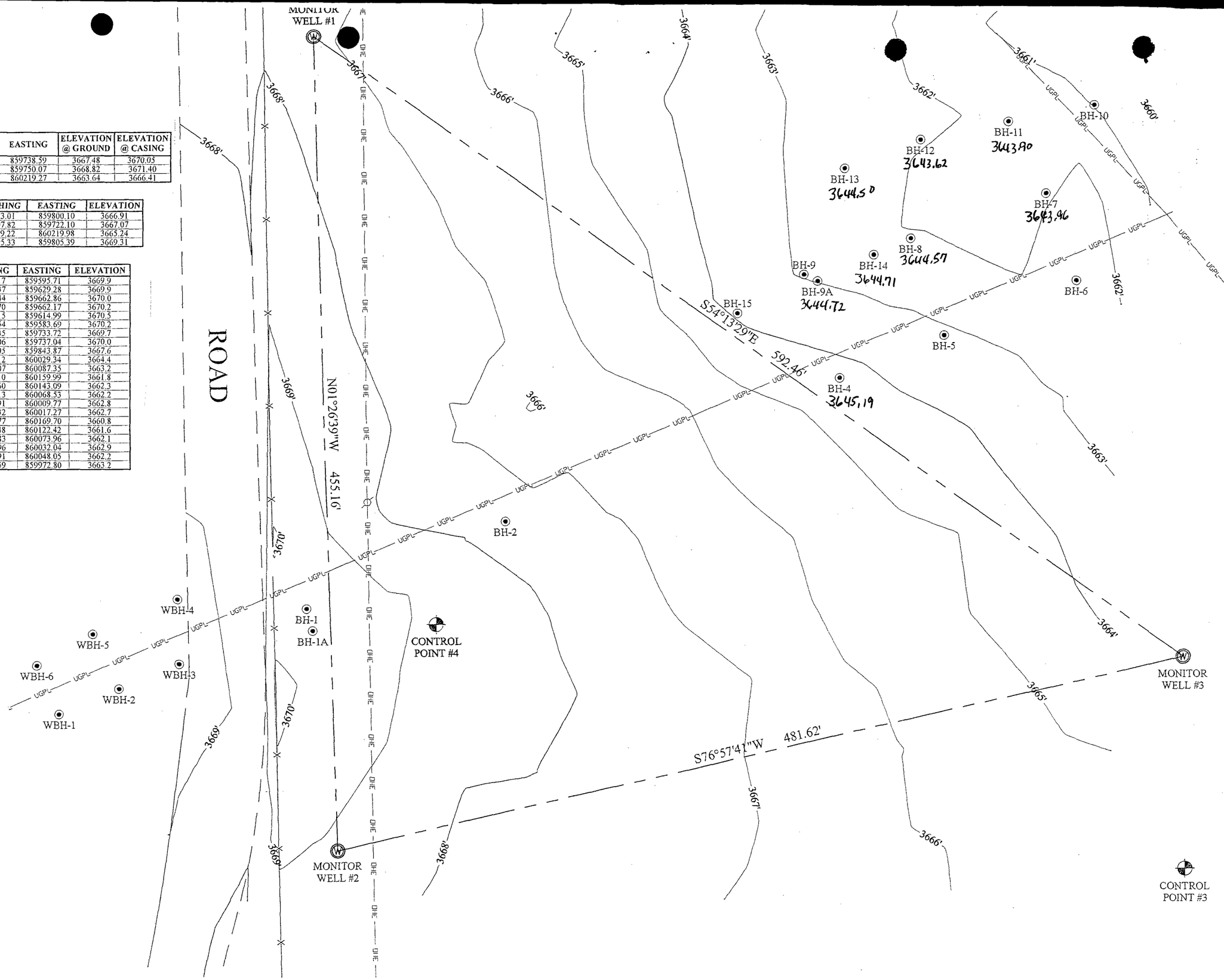
Sheet1

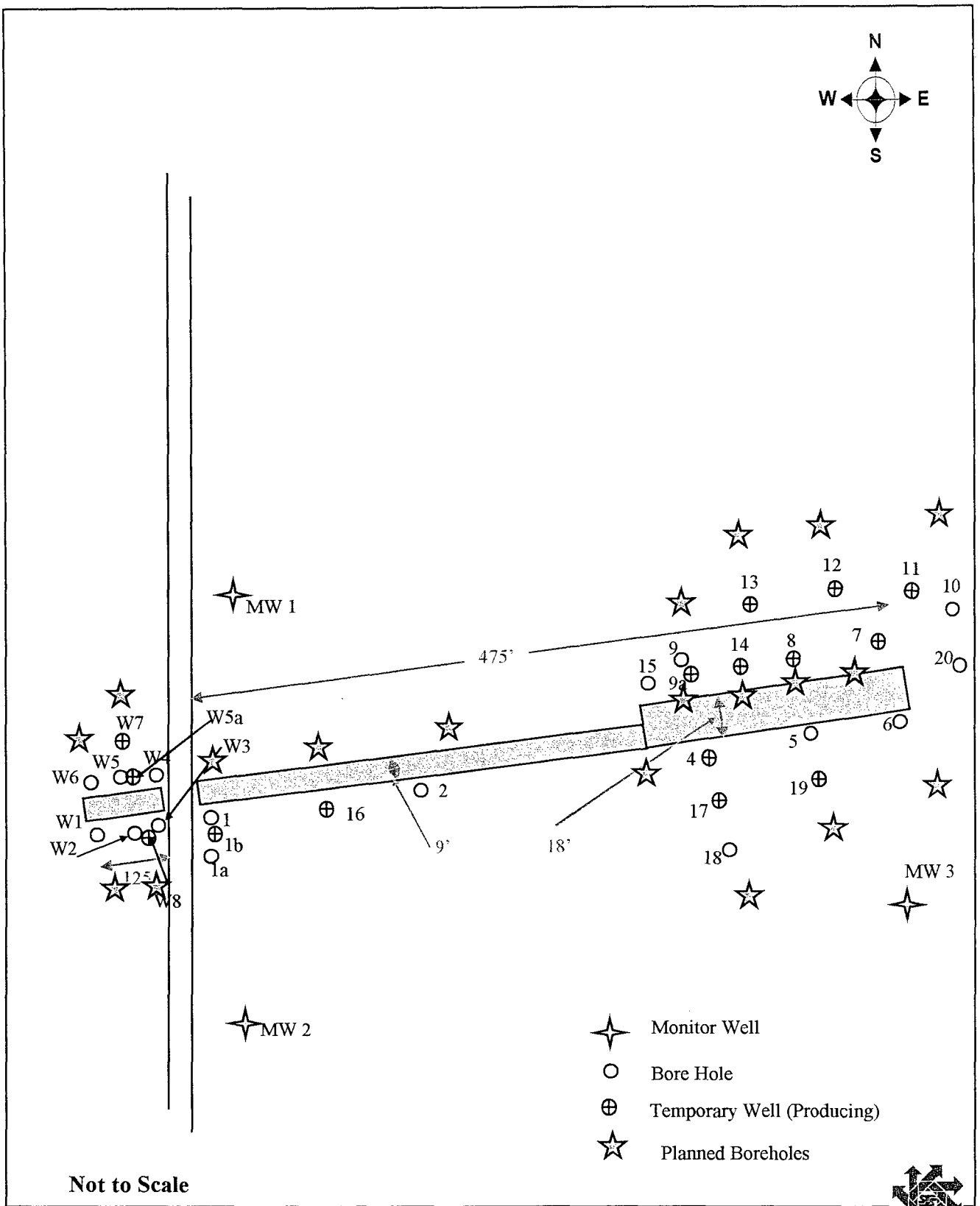
Borehole	Date	TD	Surface El.	ToC to Surface	Top Of Oil	Top Of Water	Product Thickness	El. of Top of Oil	El. of Top of Water	Status
BH-1			3669.7							
BH-1A			3670							
BH-1B				1.54	26.64	29.85	3.21	-25.1	-28.31	
BH-2			3667.6							
BH-3										
BH-4			3664.4	0.71	19.92	25.27	5.35	3645.19	3639.84	
BH-5			3663.2							
BH-6			3661.8							
BH-7			3662.3	1.42	19.76	24.9	5.14	3643.96	3638.82	
BH-8			3662.2	2.29	19.92	24.86	4.94	3644.57	3639.63	
BH-9			3662.8							
BH-9A			3662.7	1.83	19.81	25.15	5.34	3644.72	3639.38	
BH-10			3660.8							
BH-11			3661.6	2.17	19.87	24.23	4.36	3643.9	3639.54	
BH-12			3662.1	1.75	20.23	20.77	0.54	3643.62	3643.08	
BH-13			3662.9	2.42	20.82	25	4.18	3644.5	3640.32	
BH-14			3662.2	2.67	20.16	24.62	4.46	3644.71	3640.25	
BH-15			3663.2							
BH-16				1.54	25.78	29.41	3.63	-24.24	-27.87	
BH-17				2.92	23.11	27.45	4.34	-20.19	-24.53	
BH-18										
BH-19				3.08	22.25	26.75	4.5	-19.17	-23.67	
BH-20										
WBH-1			3669.9							
WBH-2			3669.9							
WBH-3			3670							
WBH-4			3670.2							
WBH-5			3670.5							
WBH-5A							0	0	0	
WBH-6			3670.2							
WBH-7										
WBH-8										
MW-1			3667.48				0	3667.48	3667.48	
MW-2			3668.82				0	3668.82	3668.82	
MW-3			3663.64				0	3663.64	3663.64	

DESCRIPTION	NORTHING	EASTING	ELEVATION @ GROUND	ELEVATION @ CASING
MONITOR WELL #1	595024.03	859738.59	3667.48	3670.05
MONITOR WELL #2	594569.02	859750.07	3668.82	3671.40
MONITOR WELL #3	594677.68	860219.27	3663.64	3666.41

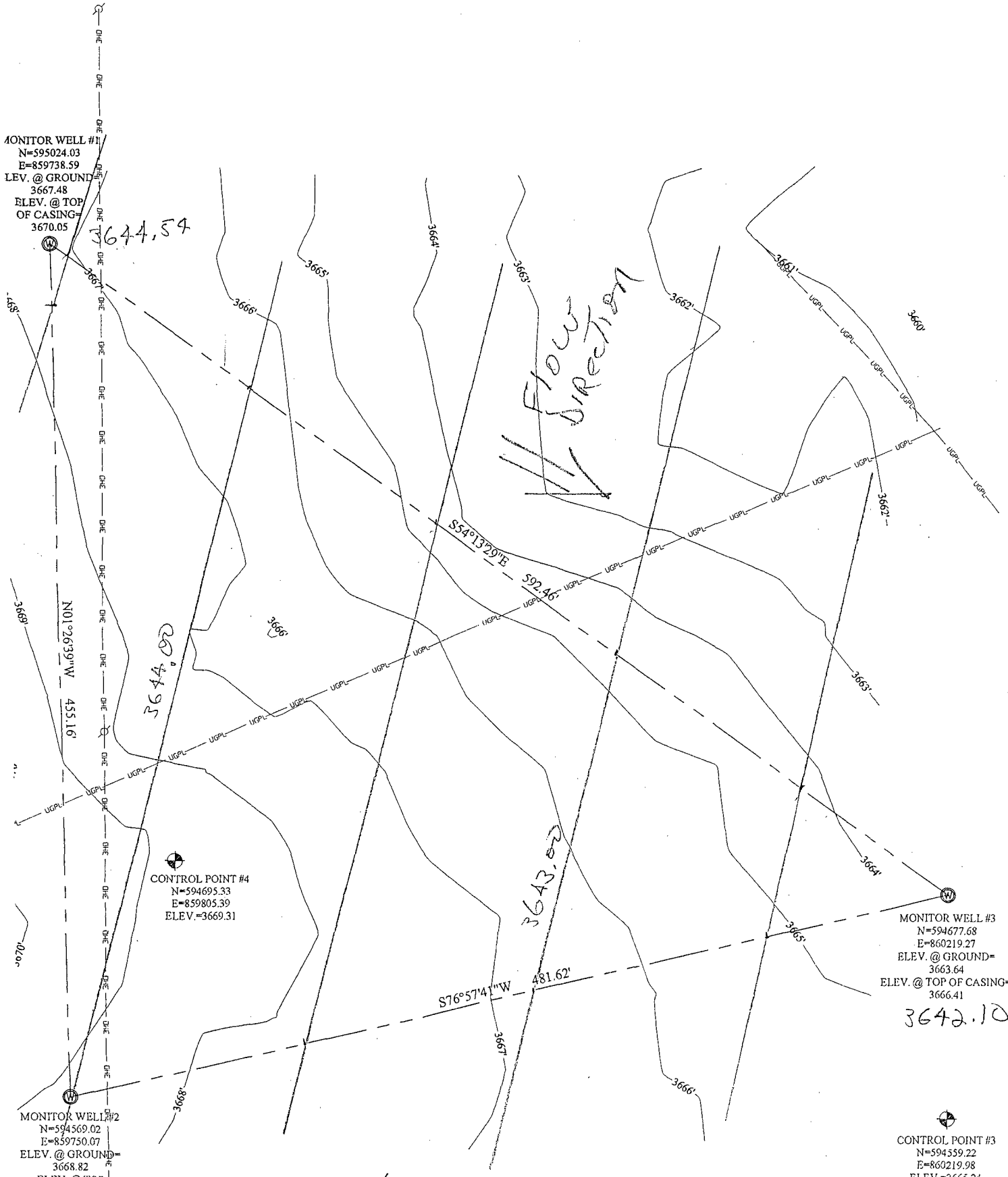
DESCRIPTION	NORTHING	EASTING	ELEVATION
CONTROL POINT #1	594323.01	859800.10	3666.91
CONTROL POINT #2	595307.82	859722.10	3667.07
CONTROL POINT #3	594559.22	860219.98	3665.24
CONTROL POINT #4	594695.33	859805.39	3669.31

DESCRIPTION	NORTHING	EASTING	ELEVATION
WBH-1	594645.17	859595.71	3669.9
WBH-2	594659.37	859629.28	3669.9
WBH-3	594673.44	859662.86	3670.0
WBH-4	594709.70	859662.17	3670.2
WBH-5	594690.15	859614.99	3670.5
WBH-6	594672.54	859583.69	3670.2
BH-1	594704.45	859733.72	3669.7
BH-1A	594692.06	859737.04	3670.0
BH-2	594753.05	859843.87	3667.6
BH-4	594833.12	860029.34	3664.4
BH-5	594857.07	860087.35	3663.2
BH-6	594888.10	860159.99	3661.8
BH-7	594936.60	860143.09	3662.3
BH-8	594911.13	860068.53	3662.2
BH-9	594890.91	860009.77	3662.8
BH-9A	594887.32	860017.27	3662.7
BH-10	594985.77	860169.70	3660.8
BH-11	594976.48	860122.42	3661.6
BH-12	594965.83	860073.96	3662.1
BH-13	594949.96	860032.04	3662.9
BH-14	594901.91	860048.05	3662.2
BH-15	594869.59	859972.80	3663.2





Navajo Refining Company October 20, 2002	**Monument 6" Gathering Line Leak Site**	*Safety & Environmental Solutions, Inc.*


MONITOR WELL #1
N=595024.03
E=859738.59
LEV. @ GROUND=
3667.48
ELEV. @ TOP
OF CASING=
3670.05
3644.54
MONITOR WELL #2
N=594569.02
E=859750.07
ELEV. @ GROUND=
3668.82
ELEV. @ TOP
OF CASING=
3671.40
3644.00
CONTROL POINT #4
N=594695.33
E=859805.39
ELEV.=3669.31
CONTROL POINT #3
N=594559.22
E=860219.98
ELEV.=3665.24
MONITOR WELL #3
N=594677.68
E=860219.27
ELEV. @ GROUND=
3663.64
ELEV. @ TOP OF CASING=
3666.41
3642.10
N01°26'39"W 455.16'
S54°13'29"E 592.46'
S76°57'41"W 481.62'
3644.82
3643.82
Flow Direction
1 in = 50'
gradient = 1/222 = 0.0045 ESE
K = 4 to 400 ft/yr, V = Ki = 0.018 to 1.8 ft/yr
DMB
10/15/02