JICARILLA APACHE TRIBE ENVIRONMENTAL PROTECTION OFFICE Bour OX P.O. BOX 507

AND OIL & GAS APAUNISTRATION

DULCE, NEW MEXICO 87528

PIT REMEDIATION AND CLOSURE REPORT

COMPANY	Telephone: (505) 326 9209
Operator: AMOCO PRODUCTION COMPANY	
Address: 200 Amoco Court, Farmington, N	M 87401
Facility or Well Name:	7 #146 - 31
Sec 10 TZ	SN R Sw County RIO ARRIBH
Location: Unit or Qtr/Qtr Sec Other 8	CoW
Pit Type: Separator Dehydrator Other_ 8	
Land Type: RANGE	
Pit Location: Pit dimensions: length_	42', width37', depth17'
(Attach diagram) Reference: wellhead X,	other
Footage from reference: 165	5
Direction from reference: 5	5 Degrees A East North
	West South ×
	Less than 50 feet (20 points)
Depth To Groundwater:	50 feet to 99 feet (10 points)
(Vertical distance from contaminants to seasonal	Greater than 100 feet (0 points)
high water elevation of groundwater)	Variation 100 feet (10 points)
Distance to an Ephemeral Stream	Less than 100 feet (10 points) Greater than 100 feet (0 points)
(Downgradient dry wash greater than ten feet in width)	
Distance to Nearest Lake, Playa, or Watering Pond	Less than 100 feet (10 points) Greater than 100 feet (0 points)
(Downgradient lakes, playas and livestock or wildlife watering ponds)	Greater than 100 feet.
Wellhead Protection Area:	Yes (20 points) No (0 points)
If the than 200 feet from a private	140 (0 0 0 0 0 0 0 0 0 0
domestic water source, or: less than 1000 feet from all other water sources)	Less than 100 feet (20 points)
Distance To SurfaceWater:	100 feet to 1000 feet (10 points)
(Horizontal distance to perennial lakes, ponds, rivers, streams, creeks,	Greater than 1000 feet (0 points)
irrigation canals and ditches)	RANKING SCORE (TOTAL POINTS):
	RANKING SCORE (TOTAL TOTAL)

			1
	_	Date Completed:	9/24/98
ate Remediation Sta	rted:	Approx cubic yards _	800
emediation Method: Check all appropriate ections)	Excavation Landfarmed		
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Other		
Remediation Location le. landfarmed onsite, ame and location of ffsite facility)	X Officia		
General Description	of Remediai Action.		
Groundwater Encoun	tered: No X Yes	Depth	
	Sample locationsee Attached	d Documents	
Final Pit: Closure Sampling:			
(if multiple samples, attach sample results	Sample depth NORTH S	5 (DEWALL)	
and diagram of sample locations and depths)	Sample depth $\frac{11 \times 80231}{9/24/98}$	Sample time _	1300
	Sample Results		
	-	Water: Ben	
	Don: Denies		nene (ppb)
	Field Headspace (ppm)		ylbenzene (ppb)
	TPH (ppm)	ND Total	al Xylenes (ppb)
a leaster Somn	No. Y		sults)
Groundwater Samp		OVER TO THE AND COMP	LETE TO THE BEST OF N
I HEREBY CERTIF KNOWLEGE AND	Y THAT THE INFORMATION ABO BELIEF	JVE IS TRUE AND COM	
KNOWEROE		NAME Buddy D. Shi	a w
DATE	9/24/98 PRINTED	Environment	al Coordinator
SIGNATURE Que	OF THE PIT CLOSURE INFORMAT	TON PIT CLOSURE IS AI	PPROVED IN ACCORDAN
TO THE JICARILI	A Al Achie I Riber		
APPROVED: YES	NO (REASON)		
" V_	-Cmall DATI	E: 10-1-98	

3003922482 LOCATION NO: 87645 BLAGG ENGINEERING, INC. CLIENT: AMOCO P.O. BOX 87, BLOOMFIELD, NM 87413 C.D.C. ND: _____ (505) 632-1199FIELD REPORT: CLOSURE VERIFICATION PAGE No: ____ of ____ DATE STARTED: 9/24/98 LOCATION: NAME JICA. CONTR. 146 WELL #: 31 PIT: BLOW DATE FINISHED: _ QUAD/UNIT: E SEC: 10 TWP: 25N RNG: 5W PM: NM CNTY: RA ST: NM ENVIRONMENTAL QTR/FOOTAGE: 1660 FALL 1095 FML CONTRACTOR: P45 SPECIALIST: ___ EXCAVATION APPROX. 42 FT. x 37 FT. x 17 FT. DEEP. CUBIC YARDAGE: 800 DISPOSAL FACILITY: ON-SITE REMEDIATION METHOD: LANDER PROPERTY LEASE: JC 146 FORMATION: MY LAND USE: RANGE FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 165 FT. SSSE FROM WELLHEAD. DEPTH TO GROUNDWATER: >100' NEAREST WATER SOURCE: >1000' NEAREST SURFACE WATER: >1000' CHECK DNE NMOCD PANKING SCORE: _ O NMOCD TPH CLOSURE STD: 5000 PPM ✓ PIT ABANDONED _____ STEEL TANK INSTALLED SOIL AND EXCAVATION DESCRIPTION _____ FIBERGLASS TANK INSTALLED SIDEWALLS - MOSTLY OK. YELL. DRANGE TO BROWN SAND TO SILTY SAND, NOW COHESIVE, SLIGHTLY MUIST FIRM, BOTTOM Z' OF WEST SIDEWALL STAINED NO APPARENT HE ODUR DETECTED WIN EXCOUNTION OR IN ANY OF THE OUR SAMPLES, BOTTOM - BEDROCK (SHALE), VERY PALE DRINGE TO NOD RED IN COLOR, VELY HARD NO APPARENT HE SOOR IN OUM SAMPLE. CLOSED BEDROCK FIELD 418.1 CALCULATIONS SAMPLE I.D. LAB No: WEIGHT (g) ML. FREON DILUTION READING CALC. ppm BOTTOM 1:1 ΝD <u>()</u> e 11' TPH -2045 5 20 SCALE 1300

PIT PERIMETER OVM RESULTS SAMPLE FIELD HEADSPACE PID (ppm) 1 @ // 0.0 3 @ /1 / 0.0 3 @ /1 / 0.0 SEARCER (SA) 3 DOWNATED PROFILE	0	FT	3									OFILE	
LAB SAMPLES SAMPLE ANALYSIS TIME ID	TO WELL		H2'		71	SAMPLE SA	RESI	ULTS FIELD HEAR PID (P P P P P P P P P P P P P P P P P P P	S TIME	A In	SEI (1777	A'
TRAVEL NOTES: CALLOUT: ONSITE: 9/24/98 - AFTER.	TRAVE	EL NOTES:	CALLOUT	-:				_ ON	SITE:	9/24/98	- AFTER.		

BLAGG ENGINEERING, INC.

P.O. Box 87, Bloomfield, New Mexico 87413 Phone: (505)632-1199 Fax: (505)632-3903

FIELD MODIFIED EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client:

Amoco

Project #:

Sample ID:

1 @ 11'

Date Analyzed:

09-24-98

Project Location:

Jicarilla Contract # 146 - 31

Date Reported:

09-24-98

Laboratory Number:

TPH-2045

Sample Matrix:

Soil

Parameter	Result, mg/kg	Detection Limit, mg/kg
Total Recoverable Petroleum Hydrocarbons	ND	20

ND = Not Detectable at stated detection limits.

QA/QC:

QA/QC Sample TPH mg/kg	Duplicate TPH mg/kg — — — — — —	% *Diff. ———
236	220	7.02

^{*}Administrative Acceptance limits set at 30%.

Method:

Modified Method 418.1, Petroleum Hydrocarbons, Total

Recoverable, Chemical Analysis of Water and Waste,

USEPA Storet No.4551, 1978

Comments:

Blow Pit - BJ645

Review

Analyst

BLAGG ENGINEERING, INC.

P.O. Box 87, Bloomfield, New Mexico 87413 Phone: (505)632-1199 Fax: (505)632-3903

Field TPH-Worksheet

Client: Amoco Project #:

Sample ID: Date Analyzed: 09-24-98
Project Location: Jicarilla Contract # 146 - 31 Date Reported: 09-24-98

Laboratory Number: TPH-2045 Sample Matrix: Soil

Sample Weight: 5.00 grams Volume Freon: 20.00 mL

Dilution Factor: 1 (unitless)
TPH Reading: 4 mg/kg

TPH Result:

Reported TPH Result:

Actual Detection Limit:

Reported Detection Limit:

16.0 mg/kg

16 mg/kg

20.0 mg/kg

QA/QC: Original Duplicate %
TPH mg/kg TPH mg/kg Diff.
----236 220 7.02

Comments: Blow Pit - BJ645

JICARILLA APACHE TRIBE ENVIRONMENTAL PROTECTION OFFICE P.O. BOX 507 DULCE, NEW MEXICO 87528

SUBMIT 1 COPY TO

NATURAL RESOURCE DEPT

AND OIL & GAS ADMINISTRATION

PIT REMEDIATION AND CLOSURE REPORT

Operator: AMOCO PRODUCTION COMPANY	Telephone: (505)326-9200	
Farmington, NM	87401	-
Facility or Well Name:	T # 146-31	-
Facility or Well Name: JUNIOUS 10 m 75	A P. SUZ COUNTY LIO ARRIBA	
Facility or Well Name: Sec O T 25 Location: Unit or Qtr/Qtr Sec Sec O T 25	K_GGGumiy	
Pit Type: Separator X Dehydrator Other		
Land Type: Separator RANGE		
Divisionary length 7	_l', width_ Z61, depth_ IS'	
Pit Location: (Attach diagram) Pit difficulties. Pit difficulties.	other	
Reference: weithead, Footage from reference:	5	
Footage from reference:	Degrees East North	
Direction from reference:	Degrees East North of South X	
	(00	
Depth To Groundwater: (Vertical distance from	Less than 50 feet (20 points) 50 feet to 99 feet (10 points) Greater than 100 feet (0 points)	
contaminants to seasonal high water elevation of		
groundwater)	Less than 100 feet (10 points)	
Distance to an Ephemeral Stream (Downgradient dry wash greater than	Greater than 100 feet (0 points)	
ten feet in width)	Less than 100 feet (10 points)	
Distance to Nearest Lake, Playa, or Watering Pond (Downgradient lakes, playas and	Greater than 100 feet (0 points)	
livestock or wildlife watering ponds)	Yes (20 points)	
Wellhead Protection Area: (Less than 200 feet from a private	No (0 points)	
domestic water source, or: less than 1000 feet from all other water sources)	Less than 100 feet (20 points)	
Distance To SurfaceWater:	100 feet to 1000 feet (10 points)	:
(Horizontal distance to perennial lakes, ponds, rivers, streams, creeks,	Greater than 1000 feet (0 points)	
irrigation canals and ditches)	RANKING SCORE (TOTAL POINTS):	
u.	KANKING SCOKE (TOTAL TOTAL	

	Date Completed: 9/25/98
Date Remediation Star	Ted: Date Completed Z50 Excavation × Approx. cubic yards Z50
emediation Method: Theck all appropriate ections)	Excavation Approx. Cline Juris Landfarmed Insitu Bioremediation
,	Other
Remediation Location: (i.e. landfarmed onsite, name and location of	Onsite X Offsite
	f Remedial Action: Excavation BEDROWS BOTTOM.
Groundwater Encount	ered: No X Yes Depth
Final Pit: Closure Sampling:	Sample location see Attached Documents TPH & BTEX LOB LESUITS DERIVED FROM 4 PT. Composite OF SIDEWALLS.
(if multiple samples, attach sample results	NORTH SIDEWALL - OUN KERUNG ONOTTS
and diagram of sample locations and depths)	Sample depth
	Sample Results Water: Benzene (ppb)
II	Soil: Benzene (ppm) Water.
	Total BTEX (ppm) 0.929 Toluene (ppb)
	Field Headspace (ppm) 705 Ethylhenzene (ppn)
	TPH (ppm) 98.7 Total Xylenes (ppb)
Groundwater Sampl	e: Yes No X (If yes, attach sample results)
I HEREBY CERTIF KNOWLEGE AND	
D 4 (1970)	9/25/98 PRINTED NAME Buddy D. Shaw
DATE SIGNATURE Sub	OA AND TITLE Environmental Coolding
AFTER REVIEW O TO THE JICARILL	F THE PIT CLOSURE INFORMATION, PIT CLOSURE IS APPROVED IN ACCORDANC A APACHE TRIBE PIT CLOSURE ORDINANCE.
APPROVED: YES	XNO (REASON)
SIGNED:	DATE: 10-1-98

	LOCATION NO: 87645
P.O. BOX 87, BLOOMFIELD, NM 87413 (505) 632-1199	C.O.C. NO: 6217
FIELD REPORT: CLOSURE VERIFICATION	PAGE No: _/ of _/
LOCATION: NAME: JICA, CONTR. 146 WELL #: 31 PIT: SEP.	DATE STARTED: 9/24/98 DATE FINISHED:
QUAD/UNIT: E SEC: 10 TWP: 25N RNG: SW PM: NM CNTY: RA ST: NM OTR/FOOTAGE: 160 FALL 1995 FWL CONTRACTOR: P45	ENVIRONMENTAL SPECIALIST: AV
EXCAVATION APPROX. 21 FT x 26 FT. x 15 FT. DEEP. CUBIC	YARDAGE: 250
DISPOSAL FACILITY: ON-SITE REMEDIATION METHO	D: LANDFARM
LAND USE: RANGE LEASE: TIC 146 FOR	RMATION: MU
FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 175 FT.	80 FROM WELLHEAD.
DEPTH TO GROUNDWATER: >100' NEAREST WATER SOURCE: >1000' NEAREST SURFAC	CHECK DNE :
	_PIT_ABANDONED
	_STEEL TANK INSTALLED _FIBERGLASS TANK INSTALLED
SIDEWALLS - MOSTLY DK. YELL. ORDINGE TO OLIVE GRAY SAND, NORT	H ZIDENALL
PREDOMINATELY LT. TO MED. GRAY NON COHESINE FIRM, MAJORITY OF WORTH SIDEWALL STAINED (EXCAND	SLIGHTLY MOIST
OR IN ANY OF THE DVM STAMPLES EXCEPT WOR STRONG) COLLECTED 4 PT. COMPOSITE SAMPLE FA	TH SIDEWALL (VERY R LOB ANKLYS)S FROM
ROTTOM - REPORCE (SANDETONE) OLIVE TO LT. GROY W COUR V	ery Hard no
BOTTOM - BEDROCK (SANDSTONE) OLIVE TO LT. GROY W COWR V APPALENT HC ODOR IN OUT SAMPLE.	,
BEDROCK CLOSED FIELD 418.1 CALCULATIONS TIME SAMPLE I.D. LAB No: WEIGHT (g) ml. FREON D	LUTION READING CALC. ppm
SCALE	
O FT PIT PERIMETER N PIT	PROFILE
OVM DEGILITES	
RESULIS NEAD SAMPLE FIELD HEADSPACE PIO (ppm)	A
PIPE B 1 @ 10' 705	·
T 0 5 73 @ 9' 0.0	15
E 05 = 0 = 7 1 0 0	1
PZDD. 26 A B DIRECT.	(22) EEDKOCK
	(33)
LAB SAMPLES	
SAMPLE ANALYSIS TIME 10 ANALYSIS TIME 50 - C HPH STEX 1400	



EPA METHOD 8015 Modified Nonhalogenated Volatile Organics **Total Petroleum Hydrocarbons**

Client: Sample ID: Laboratory Number: Chain of Custody No: Sample Matrix: Preservative: Condition:	Blagg / AMOCO SW - C D965 6217 Soil Cool Cool and Intact	Project #: Date Reported: Date Sampled: Date Received: Date Extracted: Date Analyzed: Analysis Requested:	04034-10 09-25-98 09-24-98 09-24-98 09-25-98 09-25-98 8015 TPH
Parameter		oncentration (mg/Kg)	Limit (mg/Kg)
Gasoline Range (C5 - C	10)	5.8	0.2
Diesel Range (C10 - C2	8)	92.9	0.1
Total Petroleum Hydrod	arbons	98.7	0.2

ND - Parameter not detected at the stated detection limit.

References:

Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste,

SW-846, USEPA, December 1996.

Comments:

Jicarilla Contract #146 - 31 Separator Pit. 4 Pt. Composite of Sidewalls,



EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client: Sample ID: Laboratory Number: Chain of Custody: Sample Matrix: Preservative: Condition:	Blagg / AMOCO SW - C D965 6217 Soil Cool Cool & Intact	Project #: Date Reported: Date Sampled: Date Received: Date Analyzed: Date Extracted: Analysis Requested:	04034-10 09-25-98 09-24-98 09-25-98 09-25-98 BTEX
Parameter		entration /Kg)	Det. Limit (ug/Kg)
Benzene Toluene Ethylbenzene p,m-Xylene o-Xylene		204 34.3 120 369 202	8.8 8.4 7.6 10.8 5.2
Total BTEX		929	

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ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene Bromofluorobenzene	101 % 101 %

References:

Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA,

December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846,

USEPA, December 1996.

Comments:

Jicarilla Contract #146 - 31 Separator Pit. 4 Pt. Composte of Sidewalls.

Analyst . Officer

CHAIN OF CUSTODY RECORD

1	Cool - Ice/Blue Ice	2-0615	Farmington, New Mexico 67401 (505) 632-0615				
2	Received Intact	ighway 64	5796 U.S. Highway 64				
z							
xeipt	Sample Receipt						
		Received by: (Signature)	Rec			ture)	Relinquished by: (Signature)
		Received by: (Signature)			7	ture)	Relinquished by: (Signature)
-	9.24.58	Received by: (Signature)	Date Time Reco		6	ure)	Relinquished by; (Signature)
_	Date						
25	OF SIDEWALS						
COMPOSITE	4 Pr. Co						
	/KEOW.	<	2017	2362	1400	9/24/98	SW-C
	On the second	Co	Sample Matrix	Lab Number	Sample	Sample Date	Sample No./ Identification
		No. of ntainers PH 3015) STEX 3021)	10	O 4034-10			Sampler:
द्ध	Remarks		DEALILA CONTRACT #146-51	DOGNILA CO		HMOCE	868661 AM
	WETERS	ANALYSIS / PARAMETERS	SEPARATION PIT	Project Location			Client / Project Name

JICARILLA APACHE TRIBE ENVIRONMENTAL PROTECTION OFFICE P.O. BOX 507 DULCE, NEW MEXICO 87528

SUBMIT 1 COPY TO

NATURAL RESOURCE DEPT

AND OIL & GAS ADMINISTRATION

ON-SITE SOIL REMEDIATION REPORT

Operator: AMOCO PRODUCTION COMPANY	Telephone: (505) 326-9200
Address: 200 Amoco Court, Farmington,	NM 87401
Facility or Well Name: JICARILLA CONTRACT 144	-31
Location: Unit or Qtr/Qtr Sec E Sec 10 T2	PSA' REW County RIO ARRIBA
Land Type: RANGÉ	
Date Remediation Started: 9.24 98 Remediation Method: Landfarmed Composted Other	Date Completed: 4/z1/99 Approx. cubic yards 1050
Depth To Groundwater: (pts.) 6 Distance to an Ephemeral Stream (pts.) 6 Distance to Nearest Lake, Playa, or Watering Pond (pts.) 6 Wellhead Protection Area: (pts.) 6 Distance To SurfaceWater: (pts.) 6 RANKING SCORE (TOTAL POINTS): 6	Final Closure Sampling: Sampling Date: 4 19 99 Time: //50 Sample Results: Field Headspace (ppm) 305 TPH (ppm) 973 Method (8015) Other
I HEREBY CERTIFY THAT THE INFORMATION ABOVE KNOWLEGE AND BELIEF	AME Buddy D. Shaw
AFTER REVIEW OF THE SOIL REMEDIATION INFORMATION ACCORDANCE TO THE JICARILLA APACHE TRIBE PITAPPROVED: YES NO (REASON) SIGNED: DATE:	CLOSURE ORDINANCE.

P.O. BOX 87, BLO	NEERING, INC. OMFIELD, NM 87413 332-1199	C.C.C. NO: 6895
FIELD REPORT: LANDFARM/COMF	POST PILE CLOSURE	VERIFICATION
QUAD/UNIT & SEC: 10 TWP:25N RNG:5W		DATE STARTED: 4.19.99 DATE FINISHED:
STERFESTAGE SW/4 NW/4 CONTRACTOR:	P+5	ENVIRONMENTAL REP
REMEDIATION: REMEDIATION SYSTEM: LANDFARM LAND USE: RANGE	APPROX. CUBIC Y LIFT DEPTH (ft):	
FELD: NOTES & REMARKS:	, , , , , , , , , , , , , , , , , , ,	
DEPTH TO GROUNDWATER: >//00' NEAREST WATER SOURCE:	>1000 NEAREST SURFAC	E WATER: > 1000
NMOCD THE SCORE NMOCD THE SLOSURE STD		1
LT OLIVE GRAY SAND, NON COLESIVE, SLI	IGHTLY MOIST, FIRM	:
DETECTED IN SAMPLING PT. O. SAMPLING C"- 12" COLLECTED A SPT COMPOSITE S CLOSED FIELD 418. SAMP. TIME SAMPLED. LAB NO: WEIGHT SRETCH/SAMPLE LOCATIONS	1 CALCULATIONS	<u> </u>
STAINED AREA AREA AREA AREA AREA AREA	0 1 11 1 1 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0	LAB SAMPLES
V.,.	SAMPLE FIELD HEADSPACE SAMPLE PID (ppm) ID	TPH
	LF-1 30.5 LF-1	(8015) 1150 973
lo l	1:	
- T		
300 BBL 78.		
SOO BBL TANK TO THE TANK		
3 LANDFARM DEEA#2 Z	SCALE O FT	
TRAVEL NOTES. CALLOUT: N/A	ONSITE: 4 · 19 99	

309,



EPA METHOD 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

Client: Blagg / AMOCO Sample ID: LF - 1 Laboratory Number: F061 Chain of Custody No: 6895 Sample Matrix: Soil Preservative: Cool Cool and Intact	Project #: Date Reported: Date Sampled: Date Received: Date Extracted: Date Analyzed: Analysis Requested:	403410 04-21-99 04-19-99 04-20-99 04-21-99 04-21-99 8015 TPH
--	---	--

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	46.9	0.2
Diesel Range (C10 - C28)	926	0.1
Total Petroleum Hydrocarbons	973	0.2

ND - Parameter not detected at the stated detection limit.

References:

Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste,

SW-846, USEPA, December 1996.

Comments:

Jicarilla Contract 146 - 31 Landfarm. 5 Pt. Composite.

Asser L. Geecen

Review

CHAIN OF CUSTODY RECORD

Sampler:		Client No.		S		Rem	Remarks	
Z)			403410	of				
Sample No / Sample	nie Samnie		Sample	ont				
		Lab Number	Matrix	77				
151 4.9	4.44 1150	1703	7010	7		SPT. COLIFICATION	7257	(II)
						SAMPLE HEXBOR	JEX6	30
						7000	\	
Relinquished by (Signature)			Date Time R	Received by: (Signature)		ر ب ا	Date 1	
Relinquished by: (Signature)	-			eceived by: (Signature)	Charles of the Control of the Contro			
Relinquished by: (Signature)			В	Received by: (Signature)				
			FOVIDOTECH IO	FCH IOC		Sample Receipt	ceipt	
							۲ 7	Z
			5796 U.S. I	5796 U.S. Highway 64		Received Intact	7	
			(505) 632-0615	(505) 632-0615		Cool - Ice/Blue Ice	7	