11-07

CDM
5400 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27612
tel: 919 787-5620
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AUG 2002
Received
Solid Waste
Section

July 31, 2002

Mr. Bobby Lutfy
Solid Waste Section
Division of Waste Management
401 Oberlin Road
Suite 150
Raleigh, North Carolina 27605

Subject: Initial Monitoring Well Sampling Results
Buncombe County C&D Landfill Expansion

Dear Mr. Lutfy:

The purpose of this letter is to provide the Solid Waste Section (SWS) with the initial sampling results of the monitoring wells MW-12/12d at the Buncombe County C&D Landfill expansion and provide a potentiometric contour map with the surveyed well locations. Boring logs and well construction diagrams were submitted to the SWS in a letter dated July 2, 2002. An updated well construction summary table is presented on Table 1. Sheet 1 provides monitoring well locations and a potentiometric contour map.

Samples were collected from the two monitoring wells (MW-12/12d) on June 26, 2002 and sent to Paradigm Analytical Laboratories in Wilmington, North Carolina for analysis. The samples were analyzed for the North Carolina Appendix I Volatile Organic Compounds (VOC's) list and the C&D Landfill metals list (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver).

Results for both wells were below detection limits for the VOC analysis. Samples from MW-12 had detections of barium at 0.134 mg/l and lead at 0.0129 mg/l. Both of these detections were below their respective North Carolina 2L Standards. Samples from MW-12d had detections of arsenic at 0.0138 mg/l, barium at 2.19 mg/l, and lead at 0.0135 mg/l. All of these detections were below their respective 2L Standards with the exception of barium. Arsenic, barium, and lead were previously detected in the background wells MW-1/1d and in most of the wells around the Subtitle D facility during the initial sampling event for Cells 1-3, and are therefore likely naturally occurring. The metals detections are most likely due to suspended solids in the newly installed well and should decrease as further purging and

CDM

sampling occurs during subsequent sampling events. Copies of the laboratory results are included.

If you have any questions or need additional information, please call me.

Very truly yours,

Mathew F. Colone, P.G.
Camp Dresser & McKee

NORTH CAROLINA LICENSED SEAL 1851 GEOLOGIST MATHEW F. COLONE

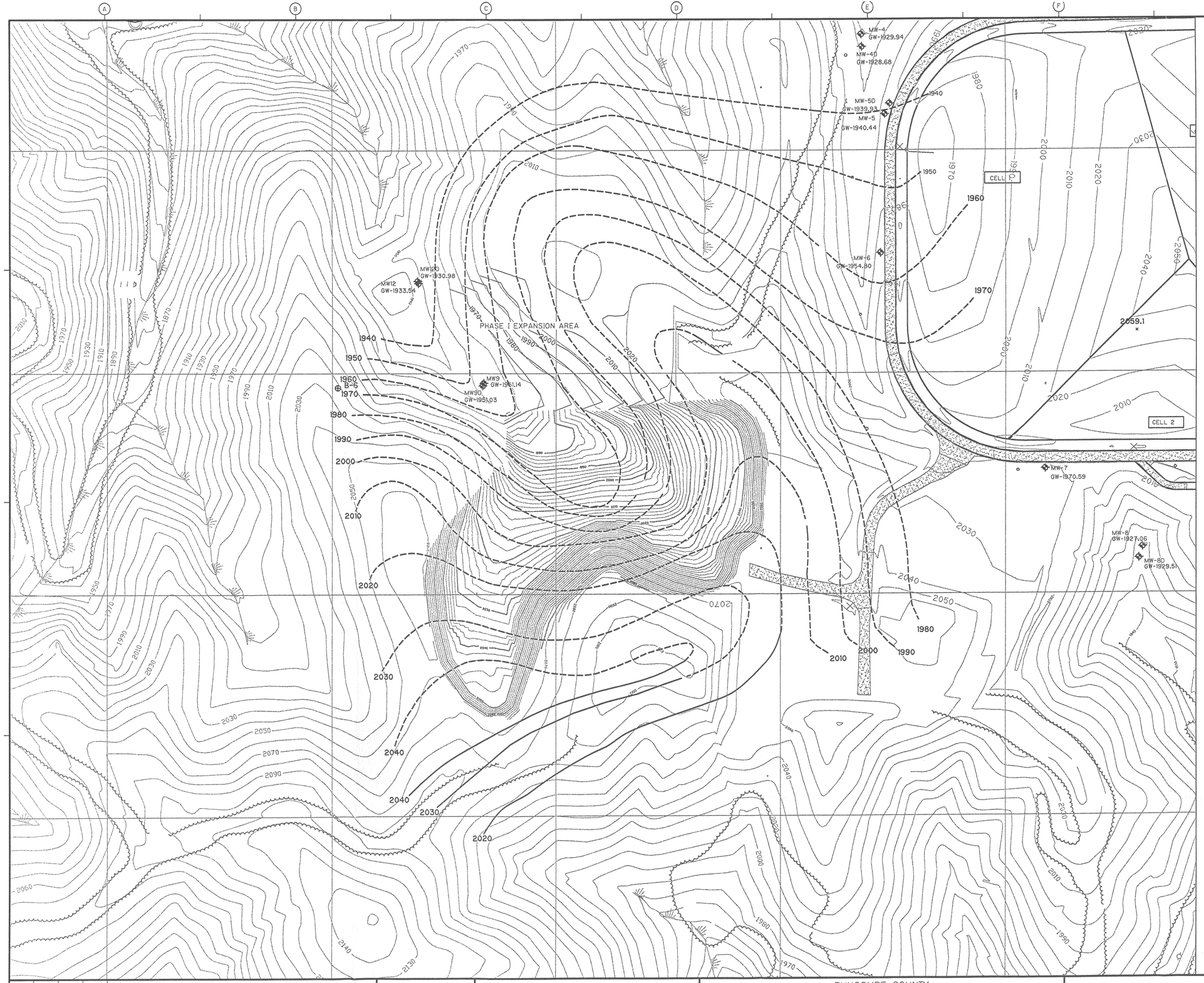
7-31-02

xc: Bob Hunter, Buncombe County
William Sessoms, SWS
Tom Yanoschak, CDM

Table 1
Well Construction Summary
Buncombe County C&D Landfill

Monitoring Well Designation	TOC Elevation (MSL)	Ground Elevation (MSL)	Depths (feet below ground surface)				Borehole Diameter (Inches)	Casing Diameter (Inches)	Date of Construction	(feet above mean sea level) Elevation	
			Total Borehole Depth	Screen Interval	Sand Filter Interval	Bentonite Seal Interval				Top of Screen Interval	Bottom of Screen Interval
MW-12	1947.39	1944.71	17.0	7.0-17.0	5.0-17.0	3.0-5.0	6	2.0	6/25/02	1937.71	1927.71
MW-12d	1947.10	1944.28	37.0	27.0-37.0	25.0-37.0	23.0-25.0	6	2.0	6/25/02	1917.28	1907.28
MW-9	1966.54	1963.70	26.0	11.0-26.0	8.0-26.0	6.0-8.0	6	2.0	10/9/97	1928.70	1913.70
MW-9d	1966.34	1963.60	40.0	35.0-40.0	32.0-40.0	29.0-32.0	6	2.0	10/9/97	1903.60	1893.60

NOTES:
MSL - Mean Sea Level
D - Deep



KEY:

MONITORING WELL

GW-2022.97 GROUND WATER ELEVATION (MEASURED 6/26/02)

POTENTIOMETRIC CONTOURS FOR EXISTING MONITORING WELLS (DASHED WHERE INFERRED)

Received Solid Waste Section

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: M. COLONE
DRAWN BY: P. DOUGLAS
SHEET CHK'D BY: T. GRANT
CROSS CHK'D BY:
APPROVED BY:
DATE: JULY 2002

CDM Camp Dresser & McKee
consulting engineering construction operations
5400 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27612
Tel: 919-787-5620 Fax: 919-781-5730

BUNCOMBE COUNTY
NORTH CAROLINA

CONSTRUCTION AND DEMOLITION LANDFILL
PHASE I EXPANSION

MONITORING WELL LOCATIONS

PROJECT NO. 6447-35174
FILE NAME: newc&dwells.dwg

SHEET NO. 1

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-12
Client Project ID: Buncombe C&D
Lab Sample ID: 47189
Lab Project ID: G175-266
Matrix: Water

Date Analyzed: 7/9/02
Analyzed By: RNP
Date Collected: 6/26/02
Date Received: 6/27/02
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	100	BQL
Acrylonitrile	200	BQL
Benzene	5.0	BQL
Bromochloromethane	5.0	BQL
Bromodichloromethane	5.0	BQL
Bromoform	5.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	5.0	BQL
Chloroethane	10	BQL
Chloroform	5.0	BQL
Chlorodibromomethane	5.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	25	BQL
Ethylene dibromide (EDB)	5.0	BQL
o-Dichlorobenzene	5.0	BQL
p-Dichlorobenzene	5.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	5.0	BQL
Ethylene dichloride	5.0	BQL
Vinylidene chloride	5.0	BQL
cis-1,2-Dichloroethene	5.0	BQL
t-1,2-Dichloroethene	5.0	BQL
Propylene dichloride	5.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	5.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	10	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	5.0	BQL
1,1,2,2-Tetrachloroethane	5.0	BQL
Tetrachloroethylene	5.0	BQL
Toluene	5.0	BQL
1,1,1-Trichloroethane	5.0	BQL
1,1,2-Trichloroethane	5.0	BQL
Trichloroethene	5.0	BQL
CFC-11 (Trichlorofluoromethane)	5.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL

Reviewed by: [illegible]

Flags: BQL = Below Quantitation Limit

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Client Project ID: Buncombe C&D
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Matrix: Water

Date Analyzed: 7/9/02
Analyzed By: RNP
Date Collected: 6/26/02
Date Received: 6/27/02
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Vinyl chloride	10	BQL
Xylenes (total)	5.0	BQL

Surrogate Spike Recoveries Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	10.2	102
1,2-Dichloroethane-d4	10.0	9.8	98
Toluene-d8	10.0	9.8	98

Comments:

All results are corrected for dilution.

Reviewed by: RN

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-12D
Client Project ID: Buncombe C&D
Lab Sample ID: 47190
Lab Project ID: G175-266
Matrix: Water

Date Analyzed: 7/9/02
Analyzed By: RNP
Date Collected: 6/26/02
Date Received: 6/27/02
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	100	BQL
Acrylonitrile	200	BQL
Benzene	5.0	BQL
Bromochloromethane	5.0	BQL
Bromodichloromethane	5.0	BQL
Bromoform	5.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	5.0	BQL
Chloroethane	10	BQL
Chloroform	5.0	BQL
Chlorodibromomethane	5.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	25	BQL
Ethylene dibromide (EDB)	5.0	BQL
o-Dichlorobenzene	5.0	BQL
p-Dichlorobenzene	5.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	5.0	BQL
Ethylene dichloride	5.0	BQL
Vinylidene chloride	5.0	BQL
cis-1,2-Dichloroethene	5.0	BQL
t-1,2-Dichloroethene	5.0	BQL
Propylene dichloride	5.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	5.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	10	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	5.0	BQL
1,1,2,2-Tetrachloroethane	5.0	BQL
Tetrachloroethylene	5.0	BQL
Toluene	5.0	BQL
1,1,1-Trichloroethane	5.0	BQL
1,1,2-Trichloroethane	5.0	BQL
Trichloroethene	5.0	BQL
CFC-11 (Trichlorofluoromethane)	5.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL

Reviewed by:

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID:	MW-12D	Date Analyzed:	7/9/02
Client Project ID:	Buncombe C&D	Analyzed By:	RNP
Lab Sample ID:	47190	Date Collected:	6/26/02
Lab Project ID:	G175-266	Date Received:	6/27/02
Matrix:	Water	Dilution:	1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Vinyl chloride	10	BQL
Xylenes (total)	5.0	BQL

Surrogate Spike Recoveries Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	10.3	103
1,2-Dichloroethane-d4	10.0	9.7	97
Toluene-d8	10.0	9.9	99

Comments:

All results are corrected for dilution.

Reviewed by:

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	MW-12	Analyzed By:	RML
Client Project ID:	Buncombe C&D	Date Collected:	6/26/02
Lab Sample ID:	47189	Date Received:	6/27/02
Lab Project ID:	G175-266	Matrix:	Water
Batch ID:	2356 2350		

Metals	Result	Quantitation Limit	DF	Units	Method	Date Analyzed
Arsenic	BQL	0.0100	1	MG/L	6010B	7/9/02
Barium	**0.134**	0.100	1	MG/L	6010B	7/9/02
Cadmium	BQL	0.0100	1	MG/L	6010B	7/9/02
Chromium	BQL	0.0100	1	MG/L	6010B	7/9/02
Lead	**0.0129**	0.0100	1	MG/L	6010B	7/9/02
Mercury	BQL	0.0003	1	MG/L	7470	7/3/02
Selenium	BQL	0.0100	1	MG/L	6010B	7/9/02
Silver	BQL	0.0100	1	MG/L	6010B	7/9/02

Comments
BQL = Below Quantitation Limits
DF = Dilution Factor
J = Between MDL and RL

Reviewed By:

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	MW-12D	Analyzed By:	RML
Client Project ID:	Buncombe C&D	Date Collected:	6/26/02
Lab Sample ID:	47190	Date Received:	6/27/02
Lab Project ID:	G175-266	Matrix:	Water
Batch ID:	2356 2350		

Metals	Result	Quantitation Limit	DF	Units	Method	Date Analyzed
Arsenic	**0.0138**	0.0100	1	MG/L	6010B	7/9/02
Barium	**2.19**	0.100	1	MG/L	6010B	7/9/02
Cadmium	BQL	0.0100	1	MG/L	6010B	7/9/02
Chromium	BQL	0.0100	1	MG/L	6010B	7/9/02
Lead	**0.0135**	0.0100	1	MG/L	6010B	7/9/02
Mercury	BQL	0.0003	1	MG/L	7470	7/3/02
Selenium	BQL	0.0100	1	MG/L	6010B	7/9/02
Silver	BQL	0.0100	1	MG/L	6010B	7/9/02

Comments
BQL = Below Quantitation Limits
DF = Dilution Factor
J = Between MDL and RL

Reviewed By:

RADIGM ANALYTICAL LABORATORIES, INC.
27 Northchase Parkway SE, Wilmington, NC 28405
one: (910)-350-1903 FAX: (910)-350-1557

Chain-of Custody Record & Analytical Request

COC#

Page 1 of 1

ent: CDM
dress: 5400 GLENWOOD AVE SE 300
dress: RALEIGH, NC 27612
ote #:

Project ID: BUNCOMBE C&D
Contact: MAT COLONE
Phone: 919 781-5620
Fax: 919 781-5730

Date: 6-26-02
Turnaround: ~~48 HOUR~~ STD
Job Number:
P.O. Number:

Report To: MAT COLONE
Invoice To: SAME

Sample ID	Date	Time	Matrix	Preservatives: HCl	HNO3	ICE		Analyses: 8260	RCRA METALS									Comments: Please specify any special reporting requirements
																		G175-266
MW-12	6-26-02	1140	W	✓	✓	✓		3	1									APP I VOC / RCRA METALS
MW-12D	6-26-02	1145	W	✓	✓	✓		3	1									-48 hr. ~~turnaround~~ for both
																		STD per M Colone 4/27/02

Relinquished By	Date	Time	Received By	Date	Time	Temperature	State Certification Requested
Matthew J Colone	6-26-02	1330	[illegible]	6/27/02	1015	6.0°C	NC ✓ SC ____ Other ____

SEE REVERSE FOR TERMS AND CONDITIONS